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DATE: Tuesday, September 14, 2004

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	<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI; PLUR=YES; OP=ADJ</i>		
<input type="checkbox"/>	L14	OPG binding protein	5
<input type="checkbox"/>	L13	L12 AND binding protein	519
<input type="checkbox"/>	L12	osteoprotegerin	688
<input type="checkbox"/>	L11	L8 AND osteoprotegerin binding protein	0
<input type="checkbox"/>	L10	L8 AND OPG binding protein	0
<input type="checkbox"/>	L9	L8 AND osteoprotegerin	16
<input type="checkbox"/>	L8	424/130.1,133.1,134.1,136.1,139.1,141.1,142.1.CCLS.	2658
<input type="checkbox"/>	L7	Boyle.IN.	3277
<input type="checkbox"/>	L6	Boyle-Will.IN.	0
<input type="checkbox"/>	L5	Boyle-William.IN.	2
<input type="checkbox"/>	L4	Boyle-Bill-J.IN.	0
<input type="checkbox"/>	L3	Boyle-Will-J.IN.	0
<input type="checkbox"/>	L2	Boyle-W-J.IN.	65
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Search Results - Record(s) 1 through 16 of 16 returned.

☐ 1. Document ID: US 20040053864 A1

Using default format because multiple data bases are involved.

L9: Entry 1 of 16

File: PGPB

Mar 18, 2004

PGPUB-DOCUMENT-NUMBER: 20040053864

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040053864 A1

TITLE: Methods and compositions for control of bone formation via modulation of neuropeptide y activity

PUBLICATION-DATE: March 18, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Karsenty, Gerard	Houston	TX	US	
Ducy, Patricia	Houston	TX	US	
Amling, Michael	Hamburg		DE	

US-CL-CURRENT: [514/44](#); [424/130.1](#), [514/12](#), [514/418](#), [514/443](#), [514/469](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw. Desc
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☐ 2. Document ID: US 20040013664 A1

L9: Entry 2 of 16

File: PGPB

Jan 22, 2004

PGPUB-DOCUMENT-NUMBER: 20040013664

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040013664 A1

TITLE: Tumor necrosis factor receptors 6 alpha & 6 beta

PUBLICATION-DATE: January 22, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Gentz, Reiner L.	Belo Horizonte-Mg	CA	BR	
Yu, Guo-Liang	Berkeley	MD	US	
Ni, Jian	Germantown	MD	US	
Ebner, Reinhard	Gaithersburg	MD	US	
Feng, Ping	Germantown	MD	US	
Ruben, Steven M.	Brookeville		US	

US-CL-CURRENT: [424/130.1](#); [514/12](#)

h e b b g e e f e c ef b e

ABSTRACT:

The present invention relates to novel Tumor Necrosis Factor Receptor proteins. In particular, isolated nucleic acid molecules are provided encoding the human TNFR-6.alpha. & -6.beta. proteins. TNFR-6.alpha. & -6.beta. polypeptides are also provided as are vectors, host cells and recombinant methods for producing the same. The invention further relates to screening methods for identifying agonists and antagonists of TNFR-6.alpha. & -6.beta. activity. Also provided are diagnostic methods for detecting immune system-related disorders and therapeutic methods for treating immune system-related disorders.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	Publ	Draw Desc
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☐ 3. Document ID: US 20040005314 A1

L9: Entry 3 of 16

File: PGPB

Jan 8, 2004

PGPUB-DOCUMENT-NUMBER: 20040005314

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040005314 A1

TITLE: Apo-2l receptor agonist and cpt-11 synergism

PUBLICATION-DATE: January 8, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Escandon, Enrique	Belmont	CA	US	
Kelley, Sean K	San Mateo	CA	US	
Xiang, Hong	Palo Alto	CA	US	
Fox, Judith A			US	

US-CL-CURRENT: 424/141.1; 424/144.1, 600/1

ABSTRACT:

Methods of using effective amounts of Apo-2L receptor agonists and CPT-11 to induce apoptosis and suppress growth of cancer cells are provided.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	Publ	Draw Desc
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☐ 4. Document ID: US 20040005312 A1

L9: Entry 4 of 16

File: PGPB

Jan 8, 2004

PGPUB-DOCUMENT-NUMBER: 20040005312

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040005312 A1

TITLE: Secreted and transmembrane polypeptides and nucleic acids encoding the same

PUBLICATION-DATE: January 8, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Ashkenazi, Avi J.	San Mateo	CA	US	
Baker, Kevin P.	Darnestown	MD	US	
Botstein, David	Belmont	CA	US	
Desnoyers, Luc	San Francisco	CA	US	
Eaton, Dan L.	San Rafael	CA	US	
Ferrara, Napoleone	San Francisco	CA	US	
Filvaroff, Ellen	San Francisco	CA	US	
Fong, Sherman	Alameda	CA	US	
Gao, Wei-Qiang	Palo Alto	CA	US	
Gerber, Hanspeter	San Francisco	CA	US	
Gerritsen, Mary E.	San Mateo	CA	US	
Goddard, Audrey	San Francisco	CA	US	
Godowski, Paul J.	Burlingame	CA	US	
Grimaldi, J. Christopher	San Francisco	CA	US	
Gurney, Austin L.	Belmont	CA	US	
Hillan, Kenneth J.	San Francisco	CA	US	
Kljavin, Ivar J.	Lafayette	CA	US	
Kuo, Sophia S.	San Francisco	CA	US	
Napier, Mary A.	Hillsborough	CA	US	
Pan, James	Belmont	CA	US	
Paoni, Nicholas F.	Belmont	CA	US	
Roy, Margaret Ann	San Francisco	CA	US	
Shelton, David L.	Oakland	CA	US	
Stewart, Timothy A.	San Francisco	CA	US	
Tumas, Daniel	Orinda	CA	US	
Williams, P. Mickey	Half Moon Bay	CA	US	
Wood, William I.	Hillsborough	CA	US	

US-CL-CURRENT: 424/130.1; 435/183, 435/320.1, 435/325, 435/69.1, 530/350, 530/388.1, 536/23.2

ABSTRACT:

The present invention is directed to novel polypeptides and to nucleic acid molecules encoding those polypeptides. Also provided herein are vectors and host cells comprising those nucleic acid sequences, chimeric polypeptide molecules comprising the polypeptides of the present invention fused to heterologous polypeptide sequences, antibodies which bind to the polypeptides of the present invention and to methods for producing the polypeptides of the present invention.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWC	Draw Des
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☐ 5. Document ID: US 20030198637 A1

L9: Entry 5 of 16

File: PGPB

Oct 23, 2003

PGPUB-DOCUMENT-NUMBER: 20030198637

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030198637 A1

TITLE: Antibody selective for a tumor necrosis factor-related apoptosis-inducing ligand receptor and uses thereof

PUBLICATION-DATE: October 23, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Zhou, Tong	Birmingham	AL	US	
Kimberly, Robert P.	Birmingham	AL	US	
Koopman, William J.	Indian Springs	AL	US	
LoBuglio, Albert F.	Birmingham	AL	US	
Buchsbaum, Donald J.	Montevallo	AL	US	

US-CL-CURRENT: 424/141.1; 424/145.1, 530/388.15, 530/388.24

ABSTRACT:

An antibody of the invention interacts with human DR5 or with human DR4 to produce agonistic or antagonistic effects downstream of the receptor including inhibition of cell proliferation and apoptosis. Nucleic acid sequences and amino acid sequences of DR5 and DR4 antibodies have been elucidated and vectors and cells containing and expressing these sequences have been generated. Methods and uses for the antibodies are detailed including treatment of apoptosis-related disease and treatment of dysregulated cell growth.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	MOB	Draw Des
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☐ 6. Document ID: US 20030157094 A1

L9: Entry 6 of 16

File: PGPB

Aug 21, 2003

PGPUB-DOCUMENT-NUMBER: 20030157094

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030157094 A1

TITLE: Use of il-18 inhibitors

PUBLICATION-DATE: August 21, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Chvatchko, Yolande	Confignon	CO	CH	
Dinareello, Charles	Boulder	CO	US	
Plater-Zyberk, Christine	Geneva		CH	
Van Deventer, Santer	Haarlem		NL	
Rubinstein, Menachem	Givat Shmuel		IL	
Novick, Daniela	Rehovot		IL	
Kim, Soo-Hyun	Denver		US	

US-CL-CURRENT: 424/141.1; 424/145.1

ABSTRACT:

The invention relates to the use of inhibitors of IL-18 in the preparation of a

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medicament for treatment and/or prevention of liver injury. The invention further relates to the use of IL-18 inhibitors in the preparation of a medicament for treatment and/or prevention of arthritis, in particular rheumatoid arthritis. In addition to this, the invention relates to the use of inhibitors of IL-18 in the preparation of a medicament for treatment and/or prevention of inflammatory bowel diseases, in particular of Crohn's disease and ulcerative colitis.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	MMIC	Draw Des
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☐ 7. Document ID: US 20020168359 A1

L9: Entry 7 of 16

File: PGPB

Nov 14, 2002

PGPUB-DOCUMENT-NUMBER: 20020168359

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020168359 A1

TITLE: Human tumor necrosis factor receptor TR9

PUBLICATION-DATE: November 14, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Ni, Jian	Germantown	MD	US	
Yu, Guo-Liang	Berkeley	CA	US	
Fan, Ping	Potomac	MD	US	
Gentz, Reiner L.	Rockville	MD	US	

US-CL-CURRENT: 424/139.1; 435/320.1, 435/325, 435/69.1, 530/350, 536/23.2

ABSTRACT:

The present invention relates to a novel member of the tumor necrosis factor family of receptors. In particular, isolated nucleic acid molecules are provided encoding the human TR9 receptor. TR9 polypeptides are also provided as are vectors, host cells and recombinant methods for producing the same. The invention further relates to screening methods for identifying agonists and antagonists of TR9 receptor activity.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	MMIC	Draw Des
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☐ 8. Document ID: US 20020159998 A1

L9: Entry 8 of 16

File: PGPB

Oct 31, 2002

PGPUB-DOCUMENT-NUMBER: 20020159998

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020159998 A1

TITLE: Methods of treating multiple myeloma and myeloma-induced bone resorption using integrin antagonists

PUBLICATION-DATE: October 31, 2002

INVENTOR-INFORMATION:

h e b b g e e e f e c e f b e

NAME	CITY	STATE	COUNTRY	RULE-47
Mundy, Gregory R.	San Antonio	TX	US	
Yoneda, Toshiyuki	San Antonio	TX	US	

US-CL-CURRENT: 424/143.1; 424/141.1

ABSTRACT:

Antagonists of .alpha.4 integrin/.alpha.4 integrin ligand adhesion, which inhibit the biological effects of such adhesion are described and methods for their use are detailed. Such antagonists are useful in suppressing bone destruction associated with multiple myeloma. The homing of multiple myeloma cells to bone marrow and their .alpha.4 integrin-dependent release of bone-resorbing factors, resulting in bone destruction in patients with multiple myeloma, is inhibited.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWOC	Draw. Des.
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☐ 9. Document ID: US 20020041874 A1

L9: Entry 9 of 16

File: PGPB

Apr 11, 2002

PGPUB-DOCUMENT-NUMBER: 20020041874

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020041874 A1

TITLE: Methods of treating multiple myeloma and myeloma-induced bone resorption using integrin antagonists

PUBLICATION-DATE: April 11, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Mundy, Gregory R.	San Antonio	TX	US	
Yoneda, Toshiyuki	San Antonio	TX	US	

US-CL-CURRENT: 424/131.1; 424/133.1, 424/141.1, 424/178.1

ABSTRACT:

Antagonists of .alpha.4 integrin/.alpha.4 integrin ligand adhesion, which inhibit the biological effects of such adhesion are described and methods for their use are detailed. Such antagonists are useful in suppressing bone destruction associated with multiple myeloma. The homing of multiple myeloma cells to bone marrow and their .alpha.4 integrin-dependent release of bone-resorbing factors, resulting in bone destruction in patients with multiple myeloma, is inhibited.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWOC	Draw. Des.
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☐ 10. Document ID: US 20020022028 A1

L9: Entry 10 of 16

File: PGPB

Feb 21, 2002

PGPUB-DOCUMENT-NUMBER: 20020022028

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PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020022028 A1

TITLE: Methods of treating multiple myeloma and myeloma-induced bone resorption using integrin antagonists

PUBLICATION-DATE: February 21, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Mundy, Gregory R.	San Antonio	TX	US	
Yoneda, Toshiyuki	San Antonio	TX	US	

US-CL-CURRENT: 424/142.1; 424/133.1

ABSTRACT:

Antagonists of alpha 4 integri/alpha 4 integrin ligand adhesion, which inhibit the biological effects of such adhesion are described and methods for their use are detailed. Such antagonists are eseful in supressing bone destruction associated with multiple myeloma. The homing of multiple myeloma cells to bone marrow and their alpha 4 integrin-dependent release of bone-resorbing factors, resulting in bone destruction in patients with multiple myeloma, is inhibited

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	NAME	Drawn Desc
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☐ 11. Document ID: US 6764679 B2

L9: Entry 11 of 16

File: USPT

Jul 20, 2004

US-PAT-NO: 6764679

DOCUMENT-IDENTIFIER: US 6764679 B2

TITLE: Antibodies to Dcr3 Polypeptide, a TNFR Homolog

DATE-ISSUED: July 20, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ashkenazi; Avi J.	San Mateo	CA		
Botstein; David	Belmont	CA		
Dodge; Kelly H.	San Mateo	CA		
Goddard; Audrey	San Francisco	CA		
Gurney; Austin L.	Belmont	CA		
Kim; Kyung Jin	Los Altos	CA		
Lawrence; David A.	San Francisco	CA		
Pitti; Robert	El Cerrito	CA		
Roy; Margaret A.	San Francisco	CA		
Tumas; Daniel B.	Orinda	CA		
Wood; William I.	Hillsborough	CA		

US-CL-CURRENT: 424/130.1; 424/133.1, 424/138.1, 424/141.1, 424/143.1, 435/69.7,
530/350, 530/387.1, 530/387.3, 530/387.7 , 530/387.9, 530/388.15, 530/388.22,
530/389.1, 530/389.7

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ABSTRACT:

A TNFR homolog, identified as DcR3, is provided. Nucleic acid molecules encoding DcR3, chimeric molecules and antibodies to DcR3 are also provided.

33 Claims, 22 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 13

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	K00C	Dram Des
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☐ 12. Document ID: US 6756480 B2

L9: Entry 12 of 16

File: USPT

Jun 29, 2004

US-PAT-NO: 6756480

DOCUMENT-IDENTIFIER: US 6756480 B2

TITLE: Modulators of receptors for parathyroid hormone and parathyroid hormone-related protein

DATE-ISSUED: June 29, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kostenuik; Paul	Newbury Park	CA		
Liu; Chuan-Fa	Longmont	CO		
Lacey; David Lee	Newbury Park	CA		

US-CL-CURRENT: 530/387.1; 424/130.1, 424/178.1

ABSTRACT:

The present invention concerns therapeutic agents that modulate the activity of PTH and PTHrP. In accordance with the present invention, modulators of PTH and PTHrP comprise: (a) a PTH/PTHrP modulating domain; and (b) a vehicle, such as a polymer (e.g., PEG or dextran) or an Fc domain, which is preferred;

wherein the vehicle is covalently attached to the C-terminus of the PTH/PTHrP modulating domain. The vehicle and the PTH/PTHrP modulating domain may be linked through the N- or C-terminus of the PTH/PTHrP modulating domain, as described further below. The preferred vehicle is an Fc domain, and the preferred Fc domain is an IgG Fc domain. Preferred PTH/PTHrP modulating domains comprise the PTH and PTHrP-derived amino acid sequences described hereinafter. Other PTH/PTHrP modulating domains can be generated by phage display, RNA-peptide screening and the other techniques mentioned herein. Such peptides typically will be modulators of both PTH activity and PTHrP activity, although such techniques can be used to generate peptide sequences that serve as selective modulators (e.g., agonists of PTH activity but not PTHrP activity).

24 Claims, 29 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 15

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	K00C	Dram Des
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☐ 13. Document ID: US 6693175 B2

L9: Entry 13 of 16

File: USPT

Feb 17, 2004

US-PAT-NO: 6693175

DOCUMENT-IDENTIFIER: US 6693175 B2

TITLE: Method for diagnosing bone dysbolism

DATE-ISSUED: February 17, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Yano; Kazuki	Tochigi			JP
Kobayashi; Fumie	Tochigi			JP
Goto; Masaaki	Tochigi			JP
Washida; Naohiro	Tochigi			JP
Tsuda; Eisuke	Tochigi			JP
Higashio; Kanji	Saitama			JP
Yamada; Yoshiji	Aichi			JP

US-CL-CURRENT: 530/388.1; 424/133.1, 424/141.1, 424/172.1, 424/184.1, 435/181,
435/69.1, 435/69.7, 435/7.1, 435/7.2, 435/7.23, 435/7.71, 435/7.92, 435/7.94,
530/300, 530/350, 530/387.1, 530/387.3, 530/388.15, 530/388.2, 530/388.24,
530/388.26, 530/389.1, 530/809, 800/14

ABSTRACT:

A method of diagnosing metabolic bone diseases, especially osteoporosis and arthrosis characterized by determining the concentration of osteoclastogenesis inhibitory factor (OCIF) in humor.

Monoclonal antibodies recognizing equally both of monomer type and dimer type of OCIF. Monoclonal antibodies recognizing selectively dimer type of OCIF. And to provide an assay kit for determination of OCIF concentration comprising the aforementioned two antibodies recognizing different epitope of OCIF and having high affinity showing dissociation constant of less than 2×10^{-7} M with antigen. It is useful for a method of diagnosing metabolic bone diseases, especially osteoporosis and arthrosis or for an assay reagent for research thereof.

72 Claims, 6 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 6

Full	Title	Citation	Front	Review	Classification	Date	Reference				Claims	KBAC	Draw Det
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☐ 14. Document ID: US 6562948 B2

L9: Entry 14 of 16

File: USPT

May 13, 2003

US-PAT-NO: 6562948

DOCUMENT-IDENTIFIER: US 6562948 B2

TITLE: Receptor activator of NF-.kappa.B

DATE-ISSUED: May 13, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Anderson; Dirk M.	Seattle	WA		

US-CL-CURRENT: 530/387.9; 424/130.1, 424/143.1, 435/320.1, 435/331, 435/334,
435/69.1, 435/7.1, 530/300, 530/350, 530/388.1, 536/23.5

ABSTRACT:

Provided herein are isolated antibodies that specifically bind a RANK polypeptide.

5 Claims, 3 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 3

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Drawing Des
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☐ 15. Document ID: US 6528482 B1

L9: Entry 15 of 16

File: USPT

Mar 4, 2003

US-PAT-NO: 6528482

DOCUMENT-IDENTIFIER: US 6528482 B1

TITLE: Receptor activator of NF-.kappa.B

DATE-ISSUED: March 4, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Anderson; Dirk M.	Seattle	WA		
Galibert; Laurent	Seattle	WA		
Maraskovsky; Eugene	Caulfield Nth			AU
Dougall; William C.	Seattle	WA		

US-CL-CURRENT: 514/2; 424/130.1, 435/320.1, 435/375, 435/69.1, 435/7.1, 530/300,
530/350, 530/386

ABSTRACT:

Isolated receptors, DNAs encoding such receptors, and pharmaceutical compositions made therefrom, are disclosed. The isolated receptors can be used to regulate an immune response. The receptors are also useful in screening for inhibitors thereof.

10 Claims, 2 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 2

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Drawing Des
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☐ 16. Document ID: US 6358508 B1

L9: Entry 16 of 16

File: USPT

Mar 19, 2002

US-PAT-NO: 6358508

DOCUMENT-IDENTIFIER: US 6358508 B1

TITLE: Antibodies to human tumor necrosis factor receptor TR9

DATE-ISSUED: March 19, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ni; Jian	Rockville	MD		
Yu; Guo-Liang	Berkeley	CA		
Fan; Ping	Gaithersburg	MD		
Gentz; Reiner L.	Rockville	MD		

US-CL-CURRENT: 424/139.1; 424/178.1, 530/387.9, 530/388.22, 530/389.1, 530/391.3, 530/391.7

ABSTRACT:

The present invention relates to a novel member of the tumor necrosis factor family of receptors. In particular, isolated nucleic acid molecules are provided encoding the human TR9 receptor. TR9 polypeptides are also provided as are antibodies vectors, host cells and recombinant methods for producing the same. The invention further relates to screening methods for identifying agonists and antagonists of TR9 receptor activity.

10 Claims, 11 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 11

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	Index	Drawing Desc
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L8 AND osteoprotegerin	16

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Search Results - Record(s) 1 through 5 of 5 returned.

☐ 1. Document ID: US 20030104485 A1

Using default format because multiple data bases are involved.

L14: Entry 1 of 5

File: PGPB

Jun 5, 2003

PGPUB-DOCUMENT-NUMBER: 20030104485

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030104485 A1

TITLE: ANTIBODIES SPECIFIC FOR OSTEOPROTEGERIN BINDING PROTEINS AND METHOD OF USE

PUBLICATION-DATE: June 5, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
BOYLE, WILLIAM J.	MOORPARK	CA	US	

US-CL-CURRENT: 435/7.2; 435/320.1, 435/325, 435/69.1, 530/350, 530/388.22, 536/23.5

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw Desc
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☐ 2. Document ID: US 20030103978 A1

L14: Entry 2 of 5

File: PGPB

Jun 5, 2003

PGPUB-DOCUMENT-NUMBER: 20030103978

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030103978 A1

TITLE: Selective binding agents of osteoprotegerin binding protein

PUBLICATION-DATE: June 5, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Deshpande, Rajendra V.	Thousand Oaks	CA	US	
Hitz, Anna	Newbury Park	CA	US	
Boyle, William James	Malibu	CA	US	
Sullivan, John K.	Newbury Park	CA	US	

US-CL-CURRENT: 424/152.1; 530/388.1

ABSTRACT:

Selective binding agents of osteoprotegerin binding protein (OPGbp) are provided by the invention. More particularly, the invention provides for antibodies and antigen

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binding domains which selectively bind to OPGbp and may be used to prevent or treat conditions relating to loss of bone mass. Nucleic acid molecules encoding said antibodies and antigen binding domains, and expression vectors and host cells for the production of same are also provided.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw Des
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☐ 3. Document ID: US 20030100488 A1

L14: Entry 3 of 5

File: PGPB

May 29, 2003

PGPUB-DOCUMENT-NUMBER: 20030100488

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030100488 A1

TITLE: OSTEOPROTEGERIN BINDING PROTEINS

PUBLICATION-DATE: May 29, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
BOYLE, WILLIAM J.	MOORPARK	CA	US	

US-CL-CURRENT: 514/12; 435/252.33, 435/320.1, 435/6, 530/350, 536/23.5

ABSTRACT:

A novel polypeptide, osteoprotegerin binding protein, involved in osteoclast maturation has been identified based upon its affinity for osteoprotegerin. Nucleic acid sequences encoding the polypeptide, or a fragment, analog or derivative thereof, vectors and host cells for production, methods of preparing osteoprotegerin binding protein, and binding assays are also described. Compositions and methods for the treatment of bone diseases such as osteoporosis, bone loss due to arthritis or metastasis, hypercalcemia, and Paget's disease are also provided.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw Des
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☐ 4. Document ID: US 6316408 B1

L14: Entry 4 of 5

File: USPT

Nov 13, 2001

US-PAT-NO: 6316408

DOCUMENT-IDENTIFIER: US 6316408 B1

**** See image for Certificate of Correction ****

TITLE: Methods of use for osetoprotegerin binding protein receptors

DATE-ISSUED: November 13, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Boyle; William J.	Moorpark	CA		

US-CL-CURRENT: 514/12; 530/350

h e b b g e e f e c ef b e

ABSTRACT:

A novel polypeptide, osteoprotegerin binding protein, involved in osteolcast maturation has been identified based upon its affinity for osteoprotegerin. Nucleic acid sequences encoding the polypeptide, or a fragment, analog or derivative thereof, vectors and host cells for production, methods of preparing osteoprotegerin binding protein, and binding assays are also described. Compositions and methods for the treatment of bone diseases such as osteoporosis, bone loss due to arthritis or metastasis, hypercalcemia, and Paget's disease are also provided.

Receptors for osteoprotegerin binding proteins are also described. The receptors, and agonists and antagonists thereof, may be used to treat bone diseases.

9 Claims, 45 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 30

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Draw Desc
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☐ 5. Document ID: US 5843678 A

L14: Entry 5 of 5

File: USPT

Dec 1, 1998

US-PAT-NO: 5843678

DOCUMENT-IDENTIFIER: US 5843678 A

TITLE: Osteoprotegerin binding proteins

DATE-ISSUED: December 1, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Boyle; William J.	Moorpark	CA		

US-CL-CURRENT: 435/7.1; 514/2, 530/300, 530/350

ABSTRACT:

A novel polypeptide, osteoprotegerin binding protein, involved in osteolcast maturation has been identified based upon its affinity for osteoprotegerin. Nucleic acid sequences encoding the polypeptide, or a fragment, analog or derivative thereof, vectors and host cells for production, methods of preparing osteoprotegerin binding protein, and binding assays are also described. Compositions and methods for the treatment of bone diseases such as osteoporosis, bone loss due to arthritis or metastasis, hypercalcemia, and Paget's disease are also provided.

15 Claims, 10 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 10

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Draw Desc
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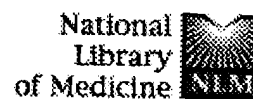
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1: Schoppet M, Al-Fakhri N, Franke FE, Katz N, Barth PJ, Maisch B, Preissner KT, Hofbauer LC. Related Articles, Links

Localization of osteoprotegerin, tumor necrosis factor-related apoptosis-inducing ligand, and receptor activator of nuclear factor-kappaB ligand in Monckeberg's sclerosis and atherosclerosis.
J Clin Endocrinol Metab. 2004 Aug;89(8):4104-12.
PMID: 15292354 [PubMed - indexed for MEDLINE]

2: Hofbauer LC, Schoppet M. Related Articles, Links

Clinical implications of the osteoprotegerin/RANKL/RANK system for bone and vascular diseases.
JAMA. 2004 Jul 28;292(4):490-5. Review.
PMID: 15280347 [PubMed - indexed for MEDLINE]

3: Hashimoto T, Abe M, Matsumoto T. Related Articles, Links

[Biochemical markers in bone metastasis]
Gan To Kagaku Ryoho. 2004 Jul;31(7):1027-33. Review. Japanese.
PMID: 15272580 [PubMed - indexed for MEDLINE]

4: Tomek S, Horak P, Pribill I, Haller G, Rossler M, Zielinski CC, Pils D, Krainer M. Related Articles, Links

Resistance to TRAIL-induced apoptosis in ovarian cancer cell lines is overcome by co-treatment with cytotoxic drugs.
Gynecol Oncol. 2004 Jul;94(1):107-14.
PMID: 15262127 [PubMed - indexed for MEDLINE]

5: Baumann B, Rader CP, Seufert J, Noth U, Rolf O, Eulert J, Jakob F. Related Articles, Links

Effects of polyethylene and TiAlV wear particles on expression of RANK, RANKL and OPG mRNA.
Acta Orthop Scand. 2004 Jun;75(3):295-302.
PMID: 15260421 [PubMed - indexed for MEDLINE]

6: Mosheimer BA, Kaneider NC, Feistritzer C, Stum DH, Wiedermann CJ. Related Articles, Links

Expression and function of RANK in human monocyte chemotaxis.
Arthritis Rheum. 2004 Jul;50(7):2309-16.
PMID: 15248232 [PubMed - indexed for MEDLINE]

7: Buxton EC, Yao W, Lane NE. Related Articles, Links


Changes in serum receptor activator of nuclear factor-kappaB ligand, osteoprotegerin, and interleukin-6 levels in patients with glucocorticoid-induced osteoporosis treated with human parathyroid hormone (1-34).
J Clin Endocrinol Metab. 2004 Jul;89(7):3332-6.
PMID: 15240611 [PubMed - indexed for MEDLINE]

8: Bord S, Frith E, Ireland DC, Scott MA, Craig JJ, Compston JE. Related Articles, Links

Synthesis of osteoprotegerin and RANKL by megakaryocytes is modulated by oestrogen.


Br J Haematol. 2004 Jul;126(2):244-51.
PMID: 15238146 [PubMed - indexed for MEDLINE]

- 9: [Lai FP, Cole-Sinclair M, Cheng WJ, Quinn JM, Gillespie MT, Sentry JW, Schneider HG.](#) [Related Articles, Links](#)

 Myeloma cells can directly contribute to the pool of RANKL in bone bypassing the classic stromal and osteoblast pathway of osteoclast stimulation.


Br J Haematol. 2004 Jul;126(2):192-201.
PMID: 15238139 [PubMed - indexed for MEDLINE]

- 10: [Wilson SE, Mohan RR, Netto M, Perez V, Possin D, Huang J, Kwon R, Alekseev A, Rodriguez-Perez JP.](#) [Related Articles, Links](#)

 RANK, RANKL, OPG, and M-CSF expression in stromal cells during corneal wound healing.


Invest Ophthalmol Vis Sci. 2004 Jul;45(7):2201-11.
PMID: 15223796 [PubMed - indexed for MEDLINE]

- 11: [Terpos E, Politou M, Szydlo R, Nadal E, Avery S, Olavarria E, Kanfer E, Goldman JM, Apperley JF, Rahemtulla A.](#) [Related Articles, Links](#)

 Autologous stem cell transplantation normalizes abnormal bone remodeling and sRANKL/osteoprotegerin ratio in patients with multiple myeloma.


Leukemia. 2004 Aug;18(8):1420-6.
PMID: 15215875 [PubMed - indexed for MEDLINE]

- 12: [Melhus H.](#) [Related Articles, Links](#)

 Soluble RANKL and risk of nontraumatic fracture.


JAMA. 2004 Jun 9;291(22):2703; author reply 2703-4. No abstract available.
PMID: 15187049 [PubMed - indexed for MEDLINE]

- 13: [Coetzee M, Kruger MC.](#) [Related Articles, Links](#)

 Osteoprotegerin-receptor activator of nuclear factor-kappaB ligand ratio: a new approach to osteoporosis treatment?


South Med J. 2004 May;97(5):506-11. Review.
PMID: 15180028 [PubMed - indexed for MEDLINE]

- 14: [Dovio A, Data V, Angeli A.](#) [Related Articles, Links](#)

 [Pathophysiological significance and clinical utility of circulating osteoprotegerin]


Ann Ital Med Int. 2004 Jan-Mar;19(1):8-19. Review. Italian.
PMID: 15176704 [PubMed - indexed for MEDLINE]

- 15: [De Wilde A, Lieberherr M, Colin C, Pointillart A.](#) [Related Articles, Links](#)

 A low dose of daidzein acts as an ERbeta-selective agonist in trabecular osteoblasts of young female piglets.


J Cell Physiol. 2004 Aug;200(2):253-62.
PMID: 15174095 [PubMed - indexed for MEDLINE]

- 16: [Seshasayee D, Wang H, Lee WP, Gribling P, Ross J, Van Bruggen N, Carano R, Grewal IS.](#) [Related Articles, Links](#)

 A novel in vivo role for osteoprotegerin ligand in activation of monocyte effector function and inflammatory response.


J Biol Chem. 2004 Jul 16;279(29):30202-9. Epub 2004 May 15.
PMID: 15145935 [PubMed - indexed for MEDLINE]


- 17: [Jang HD, Yoon K, Shin YJ, Kim J, Lee SY.](#) [Related Articles, Links](#)


 PIAS3 suppresses NF-kappaB-mediated transcription by interacting with the p65/RelA subunit.


J Biol Chem. 2004 Jun 4;279(23):24873-80. Epub 2004 Mar 26.

PMID: 15140884 [PubMed - indexed for MEDLINE]


-  **18:** [Karst M, Gorny G, Galvin RJ, Oursler MJ.](#) Related Articles, Links


 **Roles of stromal cell RANKL, OPG, and M-CSF expression in biphasic TGF-beta regulation of osteoclast differentiation.**
J Cell Physiol. 2004 Jul;200(1):99-106.
PMID: 15137062 [PubMed - indexed for MEDLINE]


-  **19:** [Masi L, Simonini G, Piscitelli E, Del Monte F, Giani T, Cimaz R, Vierucci S, Brandi ML, Falcini F.](#) Related Articles, Links

 **Osteoprotegerin (OPG)/RANK-L system in juvenile idiopathic arthritis: is there a potential modulating role for OPG/RANK-L in bone injury?**
J Rheumatol. 2004 May;31(5):986-91.
PMID: 15124262 [PubMed - indexed for MEDLINE]


-  **20:** [Yeung RS.](#) Related Articles, Links

 **The osteoprotegerin/osteoprotegerin ligand family: role in inflammation and bone loss.**
J Rheumatol. 2004 May;31(5):844-6. Review. No abstract available.
PMID: 15124240 [PubMed - indexed for MEDLINE]


-  **21:** [Hao C, Song JH, Vilimanovich U, Kneteman NM.](#) Related Articles, Links

 **Modulation of TRAIL signaling complex.**
Vitam Horm. 2004;67:81-99. Review. No abstract available.
PMID: 15110173 [PubMed - indexed for MEDLINE]


-  **22:** [Ito S, Hata T.](#) Related Articles, Links


 **Crystal structure of RANK ligand involved in bone metabolism.**
Vitam Horm. 2004;67:19-33. Review.
PMID: 15110169 [PubMed - indexed for MEDLINE]


-  **23:** [Hofbauer LC, Cepok S, Hemmer B.](#) Related Articles, Links

 **Osteoprotegerin is highly expressed in the spinal cord and cerebrospinal fluid.**
Acta Neuropathol (Berl). 2004 Jun;107(6):575-7, author reply 578. Epub 2004 Apr 22. No abstract available.
PMID: 15106011 [PubMed - indexed for MEDLINE]


-  **24:** [Roberts-Harry D, Sandy J.](#) Related Articles, Links

 **Orthodontics. Part 11: orthodontic tooth movement.**
Br Dent J. 2004 Apr 10;196(7):391-4; quiz 426.
PMID: 15071525 [PubMed - indexed for MEDLINE]


-  **25:** [Morabito N, Gaudio A, Lasco A, Atteritano M, Pizzoleo MA, Cincotta M, La Rosa M, Guarino R, Meo A, Frisina N.](#) Related Articles, Links











 **Osteoprotegerin and RANKL in the pathogenesis of thalassemia-induced osteoporosis: new pieces of the puzzle.**
J Bone Miner Res. 2004 May;19(5):722-7.
PMID: 15068494 [PubMed - indexed for MEDLINE]

















-  **26:** [Fukunaga J, Sugahara T.](#) Related Articles, Links

















 **[Osteoporosis induced by immunosuppressant]**
Nippon Rinsho. 2004 Feb;62 Suppl 2:740-3. Review. Japanese. No abstract available.
PMID: 15035219 [PubMed - indexed for MEDLINE]

-  **27:** [Suda T, Miyaura C.](#) Related Articles, Links

















 **[Recent advance in basic research for osteoporosis]**
Nippon Rinsho. 2004 Feb;62 Suppl 2:13-20. Review. Japanese. No abstract available.
PMID: 15035090 [PubMed - indexed for MEDLINE]


















-  **28:** [Ishii T, Ohshima S, Ishida T, Mima T, Tabunoki Y, Kobayashi H, Maeda M, Uede T, Liaw L, Kinoshita N, Kawase I, Saeki Y.](#) Related Articles, Links
Osteopontin as a positive regulator in the osteoclastogenesis of arthritis.
 Biochem Biophys Res Commun. 2004 Apr 9;316(3):809-15.
 PMID: 15033472 [PubMed - indexed for MEDLINE]
-  **29:** [Kobayashi-Sakamoto M, Hirose K, Isogai E, Chiba I.](#) Related Articles, Links
NF-kappaB-dependent induction of osteoprotegerin by Porphyromonas gingivalis in endothelial cells.
 Biochem Biophys Res Commun. 2004 Feb 27;315(1):107-12.
 PMID: 15013432 [PubMed - indexed for MEDLINE]
-  **30:** [Trofimov S, Pantsulaia Ia, Kobylansky E, Livshits G.](#) Related Articles, Links
Circulating levels of receptor activator of nuclear factor-kappaB ligand/osteoprotegerin/macrophage-colony stimulating factor in a presumably healthy human population.
 Eur J Endocrinol. 2004 Mar;150(3):305-11.
 PMID: 15012615 [PubMed - indexed for MEDLINE]
-  **31:** [Baek KH, Lee WY, Oh KW, Kim HS, Han JH, Kang MI, Cha BY, Lee KW, Son HY, Kang SK, Kim CC.](#) Related Articles, Links
Changes in the serum growth factors and osteoprotegerin after bone marrow transplantation: impact on bone and mineral metabolism.
 J Clin Endocrinol Metab. 2004 Mar;89(3):1246-54.
 PMID: 15001618 [PubMed - indexed for MEDLINE]
-  **32:** [Kubota A, Hasegawa K, Suguro T, Koshihara Y.](#) Related Articles, Links
Tumor necrosis factor-alpha promotes the expression of osteoprotegerin in rheumatoid synovial fibroblasts.
 J Rheumatol. 2004 Mar;31(3):426-35.
 PMID: 14994384 [PubMed - indexed for MEDLINE]
-  **33:** [Hayashi S, Tsuneto M, Yamada T, Nose M, Yoshino M, Shultz LD, Yamazaki H.](#) Related Articles, Links
Lipopolysaccharide-induced osteoclastogenesis in Src homology 2-domain phosphatase-1-deficient viable motheaten mice.
 Endocrinology. 2004 Jun;145(6):2721-9. Epub 2004 Feb 26.
 PMID: 14988381 [PubMed - indexed for MEDLINE]
-  **34:** [Ohazama A, Courtney JM, Sharpe PT.](#) Related Articles, Links
Opg, Rank, and Rankl in tooth development: co-ordination of odontogenesis and osteogenesis.
 J Dent Res. 2004 Mar;83(3):241-4.
 PMID: 14981127 [PubMed - indexed for MEDLINE]
-  **35:** [Okahashi N, Inaba H, Nakagawa I, Yamamura T, Kuboniwa M, Nakayama K, Hamada S, Amano A.](#) Related Articles, Links
Porphyromonas gingivalis induces receptor activator of NF-kappaB ligand expression in osteoblasts through the activator protein 1 pathway.
 Infect Immun. 2004 Mar;72(3):1706-14.
 PMID: 14977979 [PubMed - indexed for MEDLINE]
-  **36:** [He J, Jiang J, Safavi KE, Spangberg LS, Zhu Q.](#) Related Articles, Links
Emdogain promotes osteoblast proliferation and differentiation and stimulates osteoprotegerin expression.
 Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 2004 Feb;97(2):239-45.
 PMID: 14970783 [PubMed - indexed for MEDLINE]
-  **37:** [Harashima SI, Tsukamoto H, Horiuchi T.](#) Related Articles, Links



















-  **Osteoprotegerin and receptor activator of nuclear factor kappaB ligand expression in fibroblast-like synoviocytes from rheumatoid arthritis and osteoarthritis patients.**
Rheumatology (Oxford). 2004 Mar;43(3):396-7; author reply 397. No abstract available.
PMID: 14963213 [PubMed - indexed for MEDLINE]
-  **38:** Wang FS, Wang CJ, Chen YJ, Huang YT, Huang HC, Chang PR, Sun YC, Yang KD. [Related Articles, Links](#)
-  **Nitric oxide donor increases osteoprotegerin production and osteoclastogenesis inhibitory activity in bone marrow stromal cells from ovariectomized rats.**
Endocrinology. 2004 May;145(5):2148-56. Epub 2004 Feb 12.
PMID: 14962990 [PubMed - indexed for MEDLINE]
-  **39:** Duran A, Serrano M, Leitges M, Flores JM, Picard S, Brown JP, Moscat J, Diaz-Meco MT. [Related Articles, Links](#)
-  **The atypical PKC-interacting protein p62 is an important mediator of RANK-activated osteoclastogenesis.**
Dev Cell. 2004 Feb;6(2):303-9.
PMID: 14960283 [PubMed - indexed for MEDLINE]
-  **40:** Suda K, Udagawa N, Sato N, Takami M, Itoh K, Woo JT, Takahashi N, Nagai K. [Related Articles, Links](#)
-  **Suppression of osteoprotegerin expression by prostaglandin E2 is crucially involved in lipopolysaccharide-induced osteoclast formation.**
J Immunol. 2004 Feb 15;172(4):2504-10.
PMID: 14764723 [PubMed - indexed for MEDLINE]
-  **41:** Mogi M, Ootogoto J, Ota N, Togari A. [Related Articles, Links](#)
-  **Differential expression of RANKL and osteoprotegerin in gingival crevicular fluid of patients with periodontitis.**
J Dent Res. 2004 Feb;83(2):166-9.
PMID: 14742657 [PubMed - indexed for MEDLINE]
-  **42:** Theoleyre S, Wittrant Y, Couillaud S, Vusio P, Berreur M, Dunstan C, Blanchard F, Redini F, Heymann D. [Related Articles, Links](#)
-  **Cellular activity and signaling induced by osteoprotegerin in osteoclasts: involvement of receptor activator of nuclear factor kappaB ligand and MAPK.**
Biochim Biophys Acta. 2004 Feb 2;1644(1):1-7.
PMID: 14741739 [PubMed - indexed for MEDLINE]
-  **43:** Guillonnet C, Louvet C, Renaudin K, Heslan JM, Heslan M, Tesson L, Vignes C, Guillot C, Choi Y, Turka LA, Cuturi MC, Anegón I, Josien R. [Related Articles, Links](#)
-  **The role of TNF-related activation-induced cytokine-receptor activating NF-kappa B interaction in acute allograft rejection and CD40L-independent chronic allograft rejection.**
J Immunol. 2004 Feb 1;172(3):1619-29.
PMID: 14734743 [PubMed - indexed for MEDLINE]
-  **44:** Munoz-Torres M, de la Higuera Lopez-Frias M, Fernandez Garcia D. [Related Articles, Links](#)
-  **[Advances in osteoclast biology: the osteoprotegerin-RANK ligand system]**
Med Clin (Barc). 2004 Jan 24;122(2):75-7. Review. Spanish. Erratum in: Med Clin (Barc). 2004 Feb 28;122(7):258.
PMID: 14733862 [PubMed - indexed for MEDLINE]
-  **45:** Zwerina J, Hayer S, Tohidast-Akrad M, Bergmeister H, Redlich K, Feige U, Dunstan C, Kollias G, Steiner G, Smolen J, Schett G. [Related Articles, Links](#)










-  Single and combined inhibition of tumor necrosis factor, interleukin-1, and RANKL pathways in tumor necrosis factor-induced arthritis: effects on synovial inflammation, bone erosion, and cartilage destruction. *Arthritis Rheum.* 2004 Jan;50(1):277-90. PMID: 14730626 [PubMed - indexed for MEDLINE]
-  **46:** [Wittrant Y, Theoleyre S, Couillaud S, Dunstan C, Heymann D, Redini F.](#) [Related Articles, Links](#)
-  Relevance of an in vitro osteoclastogenesis system to study receptor activator of NF- κ B ligand and osteoprotegerin biological activities. *Exp Cell Res.* 2004 Feb 15;293(2):292-301. PMID: 14729467 [PubMed - indexed for MEDLINE]
-  **47:** [Yoneda T, Ishimaru N, Arakaki R, Kobayashi M, Izawa T, Moriyama K, Hayashi Y.](#) [Related Articles, Links](#)
-  Estrogen deficiency accelerates murine autoimmune arthritis associated with receptor activator of nuclear factor- κ B ligand-mediated osteoclastogenesis. *Endocrinology.* 2004 May;145(5):2384-91. Epub 2004 Jan 15. PMID: 14726437 [PubMed - indexed for MEDLINE]
-  **48:** [Hofbauer LC, Schoppet M, Schuller P, Viereck V, Christ M.](#) [Related Articles, Links](#)
-  Effects of oral contraceptives on circulating osteoprotegerin and soluble RANK ligand serum levels in healthy young women. *Clin Endocrinol (Oxf).* 2004 Feb;60(2):214-9. PMID: 14725683 [PubMed - indexed for MEDLINE]
-  **49:** [Skoumal M, Kolarz G, Woloszczuk W, Hawa G, Klingler A.](#) [Related Articles, Links](#)
-  Serum osteoprotegerin but not receptor activator of NF- κ B ligand correlates with Larsen score in rheumatoid arthritis. *Ann Rheum Dis.* 2004 Feb;63(2):216-7. No abstract available. PMID: 14722219 [PubMed - indexed for MEDLINE]
-  **50:** [Crisafulli A, Altavilla D, Squadrito G, Romeo A, Adamo EB, Marini R, Infrerera MA, Marini H, Bitto A, D'Anna R, Corrado F, Bartolone S, Frisina N, Squadrito F.](#) [Related Articles, Links](#)
-  Effects of the phytoestrogen genistein on the circulating soluble receptor activator of nuclear factor κ B ligand-osteoprotegerin system in early postmenopausal women. *J Clin Endocrinol Metab.* 2004 Jan;89(1):188-92. PMID: 14715848 [PubMed - indexed for MEDLINE]
-  **51:** [Zhang D, Yang YQ, Li XT, Fu MK.](#) [Related Articles, Links](#)
-  The expression of osteoprotegerin and the receptor activator of nuclear factor κ B ligand in human periodontal ligament cells cultured with and without 1 α ,25-dihydroxyvitamin D3. *Arch Oral Biol.* 2004 Jan;49(1):71-6. PMID: 14693199 [PubMed - indexed for MEDLINE]
-  **52:** [Gehrke T, Sers C, Morawietz L, Fernahl G, Neidel J, Frommelt L, Krenn V.](#) [Related Articles, Links](#)
-  Receptor activator of nuclear factor κ B ligand is expressed in resident and inflammatory cells in aseptic and septic prosthesis loosening. *Scand J Rheumatol.* 2003;32(5):287-94. PMID: 14690142 [PubMed - indexed for MEDLINE]
-  **53:** [Ogasawara T, Yoshimine Y, Kiyoshima T, Kobayashi I, Matsuo K, Akamine A, Sakai H.](#) [Related Articles, Links](#)

In situ expression of RANKL, RANK, osteoprotegerin and cytokines in


-  osteoclasts of rat periodontal tissue.
J Periodontal Res. 2004 Feb;39(1):42-9.
PMID: 14687227 [PubMed - indexed for MEDLINE]
-  **54:** [Cheng X, Kinoshita M, Takami M, Choi Y, Zhang H, Murali R.](#) Related Articles, Links
-  Disabling of receptor activator of nuclear factor-kappaB (RANK) receptor complex by novel osteoprotegerin-like peptidomimetics restores bone loss in vivo.
J Biol Chem. 2004 Feb 27;279(9):8269-77. Epub 2003 Dec 15.
PMID: 14679212 [PubMed - indexed for MEDLINE]
-  **55:** [Buzi F, Maccarinelli G, Guaragni B, Ruggeri F, Radetti G, Meini A, Mazzolari E, Cocchi D.](#) Related Articles, Links
-  Serum osteoprotegerin and receptor activator of nuclear factors kB (RANKL) concentrations in normal children and in children with pubertal precocity, Turner's syndrome and rheumatoid arthritis.
Clin Endocrinol (Oxf). 2004 Jan;60(1):87-91.
PMID: 14678293 [PubMed - indexed for MEDLINE]
-  **56:** [Crotti TN, Ahern MJ, Lange K, Weedon H, Coleman M, Roberts-Thomson PJ, Haynes DR, Smith MD.](#) Related Articles, Links
-  Variability of RANKL and osteoprotegerin staining in synovial tissue from patients with active rheumatoid arthritis: quantification using color video image analysis.
J Rheumatol. 2003 Nov;30(11):2319-24.
PMID: 14677171 [PubMed - indexed for MEDLINE]
-  **57:** [Kumamoto H, Ooya K.](#) Related Articles, Links
-  Expression of parathyroid hormone-related protein (PTHrP), osteoclast differentiation factor (ODF)/receptor activator of nuclear factor-kappaB ligand (RANKL) and osteoclastogenesis inhibitory factor (OCIF)/osteoprotegerin (OPG) in ameloblastomas.
J Oral Pathol Med. 2004 Jan;33(1):46-52.
PMID: 14675140 [PubMed - indexed for MEDLINE]
-  **58:** [Nielsen KL, Allen MR, Bloomfield SA, Andersen TL, Chen XD, Poulsen HS, Young MF, Heegaard AM.](#) Related Articles, Links
-  Biglycan deficiency interferes with ovariectomy-induced bone loss.
J Bone Miner Res. 2003 Dec;18(12):2152-8.
PMID: 14672350 [PubMed - indexed for MEDLINE]
-  **59:** [Ashcroft AJ, Cruickshank SM, Croucher PJ, Perry MJ, Rollinson S, Lippitt JM, Child JA, Dunstan C, Felsburg PJ, Morgan GJ, Carding SR.](#) Related Articles, Links
-  Colonic dendritic cells, intestinal inflammation, and T cell-mediated bone destruction are modulated by recombinant osteoprotegerin.
Immunity. 2003 Dec;19(6):849-61.
PMID: 14670302 [PubMed - indexed for MEDLINE]
-  **60:** [Naruse M, Otsuka E, Naruse M, Ishihara Y, Miyagawa-Tomita S, Hagiwara H.](#) Related Articles, Links
-  Inhibition of osteoclast formation by 3-methylcholanthrene, a ligand for arylhydrocarbon receptor: suppression of osteoclast differentiation factor in osteogenic cells.
Biochem Pharmacol. 2004 Jan 1;67(1):119-27.
PMID: 14667934 [PubMed - indexed for MEDLINE]
-  **61:** [Miyabira Y, Akiba H, Katae M, Kubota K, Kobayashi S, Takeuchi T, Garcia-Sastre A, Fukuchi Y, Okumura K, Yagita H, Aoki T.](#) Related Articles, Links
- Cutting edge: a potent adjuvant effect of ligand to receptor activator of NF-

-  **kappa B gene for inducing antigen-specific CD8+ T cell response by DNA and viral vector vaccination.**
J Immunol. 2003 Dec 15;171(12):6344-8.
PMID: 14662831 [PubMed - indexed for MEDLINE]
-  **62:** [Pennisi P, Signorelli SS, Riccobene S, Celotta G, Di Pino L, La Malfa T, Fiore CE.](#) [Related Articles, Links](#)
-  **Low bone density and abnormal bone turnover in patients with atherosclerosis of peripheral vessels.**
Osteoporos Int. 2004 May;15(5):389-95. Epub 2003 Dec 06.
PMID: 14661073 [PubMed - indexed for MEDLINE]
-  **63:** [Mandelin J, Li TF, Liliestrom M, Kroon ME, Hanemaaijer R, Santavirta S, Kontinen YT.](#) [Related Articles, Links](#)
-  **Imbalance of RANKL/RANK/OPG system in interface tissue in loosening of total hip replacement.**
J Bone Joint Surg Br. 2003 Nov;85(8):1196-201.
PMID: 14653607 [PubMed - indexed for MEDLINE]
-  **64:** [Su X, Liao EY, Peng J, Wu XP.](#) [Related Articles, Links](#)
-  **[The effects of 17 beta-estradiol on the expression of osteoprotegerin, the ligand of osteoprotegerin and related cytokines in osteosarcoma MG63 cells]**
Zhonghua Nei Ke Za Zhi. 2003 Nov;42(11):800-3. Chinese.
PMID: 14636471 [PubMed - indexed for MEDLINE]
-  **65:** [Jung K, Stephan C, Semjonow A, Lein M, Schnorr D, Loening SA.](#) [Related Articles, Links](#)
-  **Serum osteoprotegerin and receptor activator of nuclear factor-kappa B ligand as indicators of disturbed osteoclastogenesis in patients with prostate cancer.**
J Urol. 2003 Dec;170(6 Pt 1):2302-5.
PMID: 14634401 [PubMed - indexed for MEDLINE]
-  **66:** [Chan BY, Buckley KA, Durham BH, Gallagher JA, Fraser WD.](#) [Related Articles, Links](#)
-  **Effect of anticoagulants and storage temperature on the stability of receptor activator for nuclear factor-kappa B ligand and osteoprotegerin in plasma and serum.**
Clin Chem. 2003 Dec;49(12):2083-5. No abstract available.
PMID: 14633883 [PubMed - indexed for MEDLINE]
-  **67:** [Zhang J, Dai J, Yao Z, Lu Y, Dougall W, Keller ET.](#) [Related Articles, Links](#)
-  **Soluble receptor activator of nuclear factor kappaB Fc diminishes prostate cancer progression in bone.**
Cancer Res. 2003 Nov 15;63(22):7883-90.
PMID: 14633717 [PubMed - indexed for MEDLINE]
-  **68:** [Terpos E, Politou M, Rahemtulla A.](#) [Related Articles, Links](#)
-  **New insights into the pathophysiology and management of bone disease in multiple myeloma.**
Br J Haematol. 2003 Dec;123(5):758-69. Review. No abstract available.
PMID: 14632767 [PubMed - indexed for MEDLINE]
-  **69:** [Voskaridou E, Terpos E, Spina G, Palermos J, Rahemtulla A, Loutradi A, Loukopoulos D.](#) [Related Articles, Links](#)
-  **Pamidronate is an effective treatment for osteoporosis in patients with beta-thalassaemia.**
Br J Haematol. 2003 Nov;123(4):730-7.
PMID: 14616979 [PubMed - indexed for MEDLINE]

-  **70:** [Hortobagyi GN.](#) [Related Articles, Links](#)
 **Novel approaches to the management of bone metastases.**
 Semin Oncol. 2003 Oct;30(5 Suppl 16):161-6. Review.
 PMID: 14613037 [PubMed - indexed for MEDLINE]
-  **71:** [Padigel UM, Kim N, Choi Y, Farrell JP.](#) [Related Articles, Links](#)
 **TRANCE-RANK costimulation is required for IL-12 production and the initiation of a Th1-type response to Leishmania major infection in CD40L-deficient mice.**
 J Immunol. 2003 Nov 15;171(10):5437-41.
 PMID: 14607948 [PubMed - indexed for MEDLINE]
-  **72:** [Hayashi S, Yamada T, Tsuneto M, Yamane T, Takahashi M, Shultz LD, Yamazaki H.](#) [Related Articles, Links](#)
 **Distinct osteoclast precursors in the bone marrow and extramedullary organs characterized by responsiveness to Toll-like receptor ligands and TNF-alpha.**
 J Immunol. 2003 Nov 15;171(10):5130-9.
 PMID: 14607912 [PubMed - indexed for MEDLINE]
-  **73:** [Crotti TN, Smith MD, Findlay DM, Zreiqat H, Ahern MJ, Weedon H, Hatzinikolous G, Capone M, Holding C, Haynes DR.](#) [Related Articles, Links](#)
 **Factors regulating osteoclast formation in human tissues adjacent to peri-implant bone loss: expression of receptor activator Nf-kappaB, RANK ligand and osteoprotegerin.**
 Biomaterials. 2004 Feb;25(4):565-73.
 PMID: 14607494 [PubMed - indexed for MEDLINE]
-  **74:** [Heim M, Frank O, Kampmann G, Sochocky N, Pennimpede T, Fuchs P, Hunziker W, Weber P, Martin I, Bendik I.](#) [Related Articles, Links](#)
 **The phytoestrogen genistein enhances osteogenesis and represses adipogenic differentiation of human primary bone marrow stromal cells.**
 Endocrinology. 2004 Feb;145(2):848-59. Epub 2003 Nov 06.
 PMID: 14605006 [PubMed - indexed for MEDLINE]
-  **75:** [Naylor KE, Rogers A, Fraser RB, Hall V, Eastell R, Blumsohn A.](#) [Related Articles, Links](#)
 **Serum osteoprotegerin as a determinant of bone metabolism in a longitudinal study of human pregnancy and lactation.**
 J Clin Endocrinol Metab. 2003 Nov;88(11):5361-5.
 PMID: 14602774 [PubMed - indexed for MEDLINE]
-  **76:** [Grimaud E, Soubigou L, Couillaud S, Coipeau P, Moreau A, Passuti N, Gouin F, Redini F, Heymann D.](#) [Related Articles, Links](#)
 **Receptor activator of nuclear factor kappaB ligand (RANKL)/osteoprotegerin (OPG) ratio is increased in severe osteolysis.**
 Am J Pathol. 2003 Nov;163(5):2021-31.
 PMID: 14578201 [PubMed - indexed for MEDLINE]
-  **77:** [Barille-Nion S, Bataille R.](#) [Related Articles, Links](#)
 **New insights in myeloma-induced osteolysis.**
 Leuk Lymphoma. 2003 Sep;44(9):1463-7. Review.
 PMID: 14565645 [PubMed - indexed for MEDLINE]
-  **78:** [Fan X, Roy E, Zhu L, Murphy TC, Ackert-Bicknell C, Hart CM, Rosen C, Nanes MS, Rubin J.](#) [Related Articles, Links](#)
 **Nitric oxide regulates receptor activator of nuclear factor-kappaB ligand and osteoprotegerin expression in bone marrow stromal cells.**
 Endocrinology. 2004 Feb;145(2):751-9. Epub 2003 Oct 16.
 PMID: 14563699 [PubMed - indexed for MEDLINE]

-  **79:** [Smith BB, Cosenza ME, Mancini A, Dunstan C, Gregson R, Martin SW, Smith SY, Davis H.](#) [Related Articles, Links](#)
A toxicity profile of osteoprotegerin in the cynomolgus monkey.
 Int J Toxicol. 2003 Sep-Oct;22(5):403-12.
 PMID: 14555415 [PubMed - indexed for MEDLINE]
-  **80:** [Nagata N, Kitaura H, Yoshida N, Nakayama K.](#) [Related Articles, Links](#)
Inhibition of RANKL-induced osteoclast formation in mouse bone marrow cells by IL-12: involvement of IFN-gamma possibly induced from non-T cell population.
 Bone. 2003 Oct;33(4):721-32.
 PMID: 14555278 [PubMed - indexed for MEDLINE]
-  **81:** [Ueland T, Odgren PR, Yndestad A, Godang K, Schreiner T, Marks SC, Bollerslev J.](#) [Related Articles, Links](#)
Growth hormone substitution increases gene expression of members of the IGF family in cortical bone from women with adult onset growth hormone deficiency--relationship with bone turn-over.
 Bone. 2003 Oct;33(4):638-45.
 PMID: 14555269 [PubMed - indexed for MEDLINE]
-  **82:** [Wiethe C, Dittmar K, Doan T, Lindenmaier W, Tindle R.](#) [Related Articles, Links](#)
Enhanced effector and memory CTL responses generated by incorporation of receptor activator of NF-kappa B (RANK)/RANK ligand costimulatory molecules into dendritic cell immunogens expressing a human tumor-specific antigen.
 J Immunol. 2003 Oct 15;171(8):4121-30.
 PMID: 14530334 [PubMed - indexed for MEDLINE]
-  **83:** [Ren W, Yang SY, Fang HW, Hsu S, Wooley PH.](#) [Related Articles, Links](#)
Distinct gene expression of receptor activator of nuclear factor-kappaB and rank ligand in the inflammatory response to variant morphologies of UHMWPE particles.
 Biomaterials. 2003 Nov;24(26):4819-26.
 PMID: 14530078 [PubMed - indexed for MEDLINE]
-  **84:** [Malyszko J, Malyszko JS, Wolezynski S, Mysliwiec M.](#) [Related Articles, Links](#)
Osteoprotegerin and its correlations with new markers of bone formation and bone resorption in kidney transplant recipients.
 Transplant Proc. 2003 Sep;35(6):2227-9.
 PMID: 14529897 [PubMed - indexed for MEDLINE]
-  **85:** [Bergh JJ, Xu Y, Farach-Carson MC.](#) [Related Articles, Links](#)
Osteoprotegerin expression and secretion are regulated by calcium influx through the L-type voltage-sensitive calcium channel.
 Endocrinology. 2004 Jan;145(1):426-36. Epub 2003 Oct 02.
 PMID: 14525906 [PubMed - indexed for MEDLINE]
-  **86:** [Sattler AM, Schoppet M, Schaefer JR, Hofbauer LC.](#) [Related Articles, Links](#)
Novel aspects on RANK ligand and osteoprotegerin in osteoporosis and vascular disease.
 Calcif Tissue Int. 2004 Jan;74(1):103-6. Epub 2003 Oct 06. Review.
 PMID: 14523602 [PubMed - indexed for MEDLINE]
-  **87:** [Seidlova-Wuttke D, Hesse O, Jarry H, Christoffel V, Spengler B, Becker T, Wuttke W.](#) [Related Articles, Links](#)
Evidence for selective estrogen receptor modulator activity in a black cohosh (Cimicifuga racemosa) extract: comparison with estradiol-17beta.

Eur J Endocrinol. 2003 Oct;149(4):351-62.
PMID: 14514351 [PubMed - indexed for MEDLINE]

-  **88:** [Ha H, Kwak HB, Le SW, Kim HH, Lee ZH.](#) Related Articles, Links



Lipid rafts are important for the association of RANK and TRAF6.
Exp Mol Med. 2003 Aug 31;35(4):279-84.
PMID: 14508068 [PubMed - indexed for MEDLINE]

-  **89:** [Ueno Y, Shinki T, Nagai Y, Murayama H, Fujii K, Suda T.](#) Related Articles, Links




In vivo administration of 1,25-dihydroxyvitamin D3 suppresses the expression of RANKL mRNA in bone of thyroparathyroidectomized rats constantly infused with PTH.
J Cell Biochem. 2003 Oct 1;90(2):267-77.
PMID: 14505343 [PubMed - indexed for MEDLINE]

-  **90:** [Zhang Z, Jimi E, Bothwell AL.](#) Related Articles, Links




Receptor activator of NF-kappa B ligand stimulates recruitment of SHP-1 to the complex containing TNFR-associated factor 6 that regulates osteoclastogenesis.
J Immunol. 2003 Oct 1;171(7):3620-6.
PMID: 14500659 [PubMed - indexed for MEDLINE]

-  **91:** [Nakamura M, Udagawa N, Matsuura S, Mogi M, Nakamura H, Horiuchi H, Saito N, Hiraoka BY, Kobayashi Y, Takaoka K, Ozawa H, Miyazawa H, Takahashi N.](#) Related Articles, Links




Osteoprotegerin regulates bone formation through a coupling mechanism with bone resorption.
Endocrinology. 2003 Dec;144(12):5441-9. Epub 2003 Sep 18.
PMID: 14500574 [PubMed - indexed for MEDLINE]

-  **92:** [Kim HH, Shin HS, Kwak HJ, Ahn KY, Kim JH, Lee HJ, Lee MS, Lee ZH, Koh GY.](#) Related Articles, Links




RANKL regulates endothelial cell survival through the phosphatidylinositol 3'-kinase/Akt signal transduction pathway.
FASEB J. 2003 Nov;17(14):2163-5. Epub 2003 Sep 18.
PMID: 14500543 [PubMed - indexed for MEDLINE]

-  **93:** [Sakurai A, Okahashi N, Nakagawa I, Kawabata S, Amano A, Ooshima T, Hamada S.](#) Related Articles, Links




Streptococcus pyogenes infection induces septic arthritis with increased production of the receptor activator of the NF-kappaB ligand.
Infect Immun. 2003 Oct;71(10):6019-26.
PMID: 14500523 [PubMed - indexed for MEDLINE]

-  **94:** [Farrugia AN, Atkins GJ, To LB, Pan B, Horvath N, Kostakis P, Findlay DM, Bardy P, Zannettino AC.](#) Related Articles, Links





















Receptor activator of nuclear factor-kappaB ligand expression by human myeloma cells mediates osteoclast formation in vitro and correlates with bone destruction in vivo.
Cancer Res. 2003 Sep 1;63(17):5438-45.
PMID: 14500379 [PubMed - indexed for MEDLINE]

-  **95:** [Nakamura H, Kumei Y, Morita S, Shimokawa H, Ohya K, Shinomiya K.](#) Related Articles, Links



Suppression of osteoblastic phenotypes and modulation of pro- and anti-apoptotic features in normal human osteoblastic cells under a vector-averaged gravity condition.
J Med Dent Sci. 2003 Jun;50(2):167-76.
PMID: 12968638 [PubMed - indexed for MEDLINE]

-  **96:** [Zhang L, Feng X, McDonald JM.](#) [Related Articles](#), [Links](#)
 **The role of calmodulin in the regulation of osteoclastogenesis.**
 Endocrinology. 2003 Oct;144(10):4536-43. Epub 2003 Jun 26.
 PMID: 12960067 [PubMed - indexed for MEDLINE]
-  **97:** [Breuil V, Schmid-Antomarchi H, Schmid-Alliana A, Rezzonico R, Euler-Ziegler L, Rossi B.](#) [Related Articles](#), [Links](#)
 **The receptor activator of nuclear factor (NF)-kappaB ligand (RANKL) is a new chemotactic factor for human monocytes.**
 FASEB J. 2003 Sep;17(12):1751-3. Epub 2003 Jul 18.
 PMID: 12958198 [PubMed - indexed for MEDLINE]
-  **98:** [Lee HA, Jeong H, Kim EY, Nam MY, Yoo YJ, Seo JT, Shin DM, Ohk SH, Lee SI.](#) [Related Articles](#), [Links](#)
 **Bumetanide, the specific inhibitor of Na⁺-K⁺-2Cl⁻ cotransport, inhibits 1alpha,25-dihydroxyvitamin D3-induced osteoclastogenesis in a mouse co-culture system.**
 Exp Physiol. 2003 Sep;88(5):569-74.
 PMID: 12955156 [PubMed - indexed for MEDLINE]
-  **99:** [Srivastava S, Matsuda M, Hou Z, Bailey JP, Kitazawa R, Herbst MP, Horseman ND.](#) [Related Articles](#), [Links](#)
 **Receptor activator of NF-kappaB ligand induction via Jak2 and Stat5a in mammary epithelial cells.**
 J Biol Chem. 2003 Nov 14;278(46):46171-8. Epub 2003 Sep 02.
 PMID: 12952963 [PubMed - indexed for MEDLINE]
-  **100:** [Yamagami H, Nishioka T, Ochiai E, Fukushima K, Nomura M, Kasugai S, Moritani S, Yokogawa K, Miyamoto K.](#) [Related Articles](#), [Links](#)
 **Inhibition of osteoclastogenesis by a phosphodiesterase 4 inhibitor XT-611 through synergistic action with endogenous prostaglandin E2.**
 Biochem Pharmacol. 2003 Sep 1;66(5):801-7.
 PMID: 12948861 [PubMed - indexed for MEDLINE]
-  **101:** [Sugatani T, Alvarez UM, Hruska KA.](#) [Related Articles](#), [Links](#)
 **Activin A stimulates IkappaB-alpha/NFkappaB and RANK expression for osteoclast differentiation, but not AKT survival pathway in osteoclast precursors.**
 J Cell Biochem. 2003 Sep 1;90(1):59-67.
 PMID: 12938156 [PubMed - indexed for MEDLINE]
-  **102:** [Karsdal MA, Hjorth P, Henriksen K, Kirkegaard T, Nielsen KL, Lou H, Delaisse JM, Foged NT.](#) [Related Articles](#), [Links](#)
 **Transforming growth factor-beta controls human osteoclastogenesis through the p38 MAPK and regulation of RANK expression.**
 J Biol Chem. 2003 Nov 7;278(45):44975-87. Epub 2003 Aug 20.
 PMID: 12933809 [PubMed - indexed for MEDLINE]
-  **103:** [Park HR, Min SK, Cho HD, Kim DH, Shin HS, Park YE.](#) [Related Articles](#), [Links](#)
 **Expression of osteoprotegerin and RANK ligand in breast cancer bone metastasis.**
 J Korean Med Sci. 2003 Aug;18(4):541-6.
 PMID: 12923331 [PubMed - indexed for MEDLINE]
-  **104:** [Tabb MM, Sun A, Zhou C, Grun F, Errandi J, Romero K, Pham H, Inoue S, Mallick S, Lin M, Forman BM, Blumberg B.](#) [Related Articles](#), [Links](#)
 **Vitamin K2 regulation of bone homeostasis is mediated by the steroid and xenobiotic receptor SXR.**
 J Biol Chem. 2003 Nov 7;278(45):43919-27. Epub 2003 Aug 14.


PMID: 12920130 [PubMed - indexed for MEDLINE]

-  **105:** [Teitelbaum SL, Ross FP.](#) [Related Articles](#), [Links](#)

**Genetic regulation of osteoclast development and function.**

Nat Rev Genet. 2003 Aug;4(8):638-49. Review.

PMID: 12897775 [PubMed - indexed for MEDLINE]

-  **106:** [Min JK, Kim YM, Kim YM, Kim EC, Gho YS, Kang JJ, Lee SY, Kong YY, Kwon YG.](#) [Related Articles](#), [Links](#)

**Vascular endothelial growth factor up-regulates expression of receptor activator of NF-kappa B (RANK) in endothelial cells. Concomitant increase of angiogenic responses to RANK ligand.**

J Biol Chem. 2003 Oct 10;278(41):39548-57. Epub 2003 Jul 31.

PMID: 12893832 [PubMed - indexed for MEDLINE]

-  **107:** [Fukushima H, Kajiya H, Takada K, Okamoto F, Okabe K.](#) [Related Articles](#), [Links](#)

**Expression and role of RANKL in periodontal ligament cells during physiological root-resorption in human deciduous teeth.**

Eur J Oral Sci. 2003 Aug;111(4):346-52.


PMID: 12887401 [PubMed - indexed for MEDLINE]

-  **108:** [Chen X, Garner SC, Quarles LD, Anderson JJ.](#) [Related Articles](#), [Links](#)

**Effects of genistein on expression of bone markers during MC3T3-E1 osteoblastic cell differentiation.**

J Nutr Biochem. 2003 Jun;14(6):342-9.

PMID: 12873716 [PubMed - indexed for MEDLINE]

-  **109:** [Oh KO, Kim SW, Kim JY, Ko SY, Kim HM, Baek JH, Ryoo HM, Kim JK.](#) [Related Articles](#), [Links](#)

**Effect of Rehmannia glutinosa Libosch extracts on bone metabolism.**

Clin Chim Acta. 2003 Aug;334(1-2):185-95.


PMID: 12867291 [PubMed - indexed for MEDLINE]

-  **110:** [Robinson D, Segal M, Nevo Z.](#) [Related Articles](#), [Links](#)

**Giant cell tumor of bone. The role of fibroblast growth factor 3 positive mesenchymal stem cells in its pathogenesis.**

Pathobiology. 2002-2003;70(6):333-42.

PMID: 12865629 [PubMed - indexed for MEDLINE]

-  **111:** [Shin MM, Kim YH, Kim SN, Kim GS, Baek JH.](#) [Related Articles](#), [Links](#)

**High extracellular Ca²⁺ alone stimulates osteoclast formation but inhibits in the presence of other osteoclastogenic factors.**

Exp Mol Med. 2003 Jun 30;35(3):167-74.


PMID: 12858015 [PubMed - indexed for MEDLINE]

-  **112:** [Cheng X, Kinoshita M, Murali R, Greene MI.](#) [Related Articles](#), [Links](#)

**The TNF receptor superfamily: role in immune inflammation and bone formation.**

Immunol Res. 2003;27(2-3):287-94. Review.




















PMID: 12857975 [PubMed - indexed for MEDLINE]


















-  **113:** [Fizazi K, Yang J, Peleg S, Sikes CR, Kreimann EL, Daliani D, Olive M, Raymond KA, Janus TJ, Logothetis CJ, Karsenty G, Navone NM.](#) [Related Articles](#), [Links](#)

**Prostate cancer cells-osteoblast interaction shifts expression of growth/survival-related genes in prostate cancer and reduces expression of osteoprotegerin in osteoblasts.**

Clin Cancer Res. 2003 Jul;9(7):2587-97.

PMID: 12855635 [PubMed - indexed for MEDLINE]

-  **114:** [Terpos E, de la Fuente J, Szydlo R, Hatjiharissi E, Viniou N, Meletis J, Yataganas X, Goldman JM, Rahemtulla A.](#) [Related Articles, Links](#)
-  **Tartrate-resistant acid phosphatase isoform 5b: a novel serum marker for monitoring bone disease in multiple myeloma.**
Int J Cancer. 2003 Sep 1;106(3):455-7.
PMID: 12845688 [PubMed - indexed for MEDLINE]
-  **115:** [Crotti T, Smith MD, Hirsch R, Soukoulis S, Weedon H, Capone M, Ahern MJ, Haynes D.](#) [Related Articles, Links](#)
-  **Receptor activator NF kappaB ligand (RANKL) and osteoprotegerin (OPG) protein expression in periodontitis.**
J Periodontal Res. 2003 Aug;38(4):380-7.
PMID: 12828654 [PubMed - indexed for MEDLINE]
-  **116:** [Ikeda T, Seki S, Maki M, Noguchi N, Kawamura T, Arai S, Igari T, Koike M, Hirokawa K.](#) [Related Articles, Links](#)
-  **Hepatocellular carcinoma with osteoclast-like giant cells: possibility of osteoclastogenesis by hepatocyte-derived cells.**
Pathol Int. 2003 Jul;53(7):450-6.
PMID: 12828610 [PubMed - indexed for MEDLINE]
-  **117:** [Khapli SM, Mangashetti LS, Yogesha SD, Wani MR.](#) [Related Articles, Links](#)
-  **IL-3 acts directly on osteoclast precursors and irreversibly inhibits receptor activator of NF-kappa B ligand-induced osteoclast differentiation by diverting the cells to macrophage lineage.**
J Immunol. 2003 Jul 1;171(1):142-51.
PMID: 12816992 [PubMed - indexed for MEDLINE]
-  **118:** [Polek TC, Talpaz M, Darnay BG, Spivak-Kroizman T.](#) [Related Articles, Links](#)
-  **TWEAK mediates signal transduction and differentiation of RAW264.7 cells in the absence of Fn14/TweakR. Evidence for a second TWEAK receptor.**
J Biol Chem. 2003 Aug 22;278(34):32317-23. Epub 2003 Jun 06.
PMID: 12794080 [PubMed - indexed for MEDLINE]
-  **119:** [Walsh MC, Choi Y.](#) [Related Articles, Links](#)
-  **Biology of the TRANCE axis.**
Cytokine Growth Factor Rev. 2003 Jun-Aug;14(3-4):251-63. Review.
PMID: 12787563 [PubMed - indexed for MEDLINE]
-  **120:** [Liu B, Yu SF, Li TJ.](#) [Related Articles, Links](#)
-  **Multinucleated giant cells in various forms of giant cell containing lesions of the jaws express features of osteoclasts.**
J Oral Pathol Med. 2003 Jul;32(6):367-75.
PMID: 12787044 [PubMed - indexed for MEDLINE]
-  **121:** [Garber K.](#) [Related Articles, Links](#)
-  **Why it hurts: researchers seek mechanisms of cancer pain.**
J Natl Cancer Inst. 2003 Jun 4;95(11):770-2. No abstract available.
PMID: 12783923 [PubMed - indexed for MEDLINE]
-  **122:** [Nimmanapalli R, Bhalla K.](#) [Related Articles, Links](#)
-  **Targets in apoptosis signaling: promise of selective anticancer therapy.**
Methods Mol Biol. 2003;223:465-83. Review. No abstract available.
PMID: 12777745 [PubMed - indexed for MEDLINE]
-  **123:** [Cheung J, Mak YT, Papaioannou S, Evans BA, Fogelman I, Hampson G.](#) [Related Articles, Links](#)

-  Interleukin-6 (IL-6), IL-1, receptor activator of nuclear factor kappaB ligand (RANKL) and osteoprotegerin production by human osteoblastic cells: comparison of the effects of 17-beta oestradiol and raloxifene. *J Endocrinol.* 2003 Jun;177(3):423-33. PMID: 12773123 [PubMed - indexed for MEDLINE]
-  **124:** [Kanatani M, Sugimoto T, Kano J, Kanzawa M, Chihara K.](#) [Related Articles, Links](#)
-  Effect of high phosphate concentration on osteoclast differentiation as well as bone-resorbing activity. *J Cell Physiol.* 2003 Jul;196(1):180-9. PMID: 12767054 [PubMed - indexed for MEDLINE]
-  **125:** [Kubota K, Wakabayashi K, Matsuoka T.](#) [Related Articles, Links](#)
-  Proteome analysis of secreted proteins during osteoclast differentiation using two different methods: two-dimensional electrophoresis and isotope-coded affinity tags analysis with two-dimensional chromatography. *Proteomics.* 2003 May;3(5):616-26. PMID: 12748942 [PubMed - indexed for MEDLINE]
-  **126:** [Boyle WJ, Simonet WS, Lacey DL.](#) [Related Articles, Links](#)
-  Osteoclast differentiation and activation. *Nature.* 2003 May 15;423(6937):337-42. Review. PMID: 12748652 [PubMed - indexed for MEDLINE]
-  **127:** [Wong T, Majchrzak B, Bogoch E, Keystone EC, Fish EN.](#) [Related Articles, Links](#)
-  Therapeutic implications for interferon-alpha in arthritis: a pilot study. *J Rheumatol.* 2003 May;30(5):934-40. PMID: 12734885 [PubMed - indexed for MEDLINE]
-  **128:** [Tanaka S, Nakamura I, Inoue J, Oda H, Nakamura K.](#) [Related Articles, Links](#)
-  Signal transduction pathways regulating osteoclast differentiation and function. *J Bone Miner Metab.* 2003;21(3):123-33. Review. No abstract available. PMID: 12720046 [PubMed - indexed for MEDLINE]
-  **129:** [Nakashima T, Wada T, Penninger JM.](#) [Related Articles, Links](#)
-  RANKL and RANK as novel therapeutic targets for arthritis. *Curr Opin Rheumatol.* 2003 May;15(3):280-7. Review. PMID: 12707582 [PubMed - indexed for MEDLINE]
-  **130:** [Enomoto H, Shiojiri S, Hoshi K, Furuichi T, Fukuyama R, Yoshida CA, Kanatani N, Nakamura R, Mizuno A, Zanma A, Yano K, Yasuda H, Higashio K, Takada K, Komori T.](#) [Related Articles, Links](#)
-  Induction of osteoclast differentiation by Runx2 through receptor activator of nuclear factor-kappa B ligand (RANKL) and osteoprotegerin regulation and partial rescue of osteoclastogenesis in Runx2-/- mice by RANKL transgene. *J Biol Chem.* 2003 Jun 27;278(26):23971-7. Epub 2003 Apr 15. PMID: 12697767 [PubMed - indexed for MEDLINE]
-  **131:** [Eghbali-Fatourehchi G, Khosla S, Sanyal A, Boyle WJ, Lacey DL, Riggs BL.](#) [Related Articles, Links](#)
-  Role of RANK ligand in mediating increased bone resorption in early postmenopausal women. *J Clin Invest.* 2003 Apr;111(8):1221-30. PMID: 12697741 [PubMed - indexed for MEDLINE]
- [Bell NH.](#) [Related Articles, Links](#)

132:



RANK ligand and the regulation of skeletal remodeling.

J Clin Invest. 2003 Apr;111(8):1120-2. No abstract available.

PMID: 12697730 [PubMed - indexed for MEDLINE]

133: [Dovio A, Sartori ML, Masera RG, Ceoloni B, Reimondo G, Prolo P, Racca S, Angeli A.](#) [Related Articles, Links](#)



Autocrine down-regulation of glucocorticoid receptors by interleukin-11 in human osteoblast-like cell lines.

J Endocrinol. 2003 Apr;177(1):109-17.

PMID: 12697042 [PubMed - indexed for MEDLINE]

134: [Moreno JL, Kaczmarek M, Keegan AD, Tondravi M.](#) [Related Articles, Links](#)



IL-4 suppresses osteoclast development and mature osteoclast function by a STAT6-dependent mechanism: irreversible inhibition of the differentiation program activated by RANKL.

Blood. 2003 Aug 1;102(3):1078-86. Epub 2003 Apr 10.

PMID: 12689929 [PubMed - indexed for MEDLINE]

135: [Terpos E, Szydlo R, Apperley JF, Hatjiharissi E, Politou M, Meletis J, Viniou N, Yataganas X, Goldman JM, Rahemtulla A.](#) [Related Articles, Links](#)



Soluble receptor activator of nuclear factor kappaB ligand-osteoprotegerin ratio predicts survival in multiple myeloma: proposal for a novel prognostic index.

Blood. 2003 Aug 1;102(3):1064-9. Epub 2003 Apr 10.

PMID: 12689925 [PubMed - indexed for MEDLINE]

136: [Locklin RM, Khosla S, Turner RT, Riggs BL.](#) [Related Articles, Links](#)



Mediators of the biphasic responses of bone to intermittent and continuously administered parathyroid hormone.

J Cell Biochem. 2003 May 1;89(1):180-90.

PMID: 12682918 [PubMed - indexed for MEDLINE]

137: [Zaidi M, Blair HC, Moonga BS, Abe E, Huang CL.](#) [Related Articles, Links](#)



Osteoclastogenesis, bone resorption, and osteoclast-based therapeutics.

J Bone Miner Res. 2003 Apr;18(4):599-609. Review.

PMID: 12674320 [PubMed - indexed for MEDLINE]

138: [Huang L, Cheng YY, Chow LT, Zheng MH, Kumta SM.](#) [Related Articles, Links](#)



Receptor activator of NF-kappaB ligand (RANKL) is expressed in chondroblastoma: possible involvement in osteoclastic giant cell recruitment.

Mol Pathol. 2003 Apr;56(2):116-20.

PMID: 12665629 [PubMed - indexed for MEDLINE]

139: [Okada Y, Montero A, Zhang X, Sobue T, Lorenzo J, Doetschman T, Coffin JD, Hurley MM.](#) [Related Articles, Links](#)



Impaired osteoclast formation in bone marrow cultures of Fgf2 null mice in response to parathyroid hormone.

J Biol Chem. 2003 Jun 6;278(23):21258-66. Epub 2003 Mar 28.

PMID: 12665515 [PubMed - indexed for MEDLINE]

140: [Szalay F, Hegedus D, Lakatos PL, Tornai I, Bajnok E, Dunkel K, Lakatos P.](#) [Related Articles, Links](#)



High serum osteoprotegerin and low RANKL in primary biliary cirrhosis.

J Hepatol. 2003 Apr;38(4):395-400.

PMID: 12663228 [PubMed - indexed for MEDLINE]

141: [Schoppet M, Schaefer JR, Hofbauer LC.](#) [Related Articles, Links](#)



Low serum levels of soluble RANK ligand are associated with the presence of coronary artery disease in men.

Circulation. 2003 Mar 25;107(11):e76; author reply e76. No abstract available.
PMID: 12654623 [PubMed - indexed for MEDLINE]



142: [Varsani H, Patel A, van Kooyk Y, Woo P, Wedderburn LR.](#)

[Related Articles, Links](#)



Synovial dendritic cells in juvenile idiopathic arthritis (JIA) express receptor activator of NF-kappaB (RANK).

Rheumatology (Oxford). 2003 Apr;42(4):583-90.
PMID: 12649407 [PubMed - indexed for MEDLINE]



143: [Fox SW, Hague SJ, Lovibond AC, Chambers TJ.](#)

[Related Articles, Links](#)



The possible role of TGF-beta-induced suppressors of cytokine signaling expression in osteoclast/macrophage lineage commitment in vitro.

J Immunol. 2003 Apr 1;170(7):3679-87.
PMID: 12646633 [PubMed - indexed for MEDLINE]



144: [Takahashi E, Mukohyama H, Aoki K, Duarte WR, Lerner UH, Ohya K, Omura K, Kasugai S.](#)

[Related Articles, Links](#)



High extracellular calcium affects osteoclastogenesis in mouse bone marrow cell culture.

J Med Dent Sci. 2002 Dec;49(4):109-20.
PMID: 12641381 [PubMed - indexed for MEDLINE]



145: [Ritchlin CT, Haas-Smith SA, Li P, Hicks DG, Schwarz EM.](#)

[Related Articles, Links](#)



Mechanisms of TNF-alpha- and RANKL-mediated osteoclastogenesis and bone resorption in psoriatic arthritis.

J Clin Invest. 2003 Mar;111(6):821-31.
PMID: 12639988 [PubMed - indexed for MEDLINE]



146: [Alvarez L, Peris P, Guanabens N, Vidal S, Ros I, Pons F, Filella X, Monegal A, Munoz-Gomez J, Ballesta AM.](#)

[Related Articles, Links](#)



Serum osteoprotegerin and its ligand in Paget's disease of bone: relationship to disease activity and effect of treatment with bisphosphonates.

Arthritis Rheum. 2003 Mar;48(3):824-8.
PMID: 12632438 [PubMed - indexed for MEDLINE]



147: [Koshihara Y, Hoshi K, Okawara R, Ishibashi H, Yamamoto S.](#)

[Related Articles, Links](#)



Vitamin K stimulates osteoblastogenesis and inhibits osteoclastogenesis in human bone marrow cell culture.

J Endocrinol. 2003 Mar;176(3):339-48.
PMID: 12630919 [PubMed - indexed for MEDLINE]



148: [Ueland T, Brixen K, Mosekilde L, Mosekilde L, Flyvbjerg A, Bollerslev J.](#)

[Related Articles, Links](#)



Age-related changes in cortical bone content of insulin-like growth factor binding protein (IGFBP)-3, IGFBP-5, osteoprotegerin, and calcium in postmenopausal osteoporosis: a cross-sectional study.

J Clin Endocrinol Metab. 2003 Mar;88(3):1014-8.
PMID: 12629078 [PubMed - indexed for MEDLINE]





















149: [Wiethe C, Dittmar K, Doan T, Lindenmaier W, Tindle R.](#)

[Related Articles, Links](#)





Provision of 4-1BB ligand enhances effector and memory CTL responses generated by immunization with dendritic cells expressing a human tumor-associated antigen.


J Immunol. 2003 Mar 15;170(6):2912-22.
PMID: 12626542 [PubMed - indexed for MEDLINE]


-  **150:** [Siggeikow H, Eidner T, Lehmann G, Viereck V, Raddatz D, Munzel U, Hein G, Hufner M.](#) [Related Articles, Links](#)
-  Cytokines, osteoprotegerin, and RANKL in vitro and histomorphometric indices of bone turnover in patients with different bone diseases. *J Bone Miner Res.* 2003 Mar;18(3):529-38. PMID: 12619938 [PubMed - indexed for MEDLINE]
-  **151:** [Hamzei M, Ventriglia G, Hagnia M, Antonopolous A, Bernal-Sprekelsen M, Dazert S, Hildmann H, Sudhoff H.](#) [Related Articles, Links](#)
-  Osteoclast stimulating and differentiating factors in human cholesteatoma. *Laryngoscope.* 2003 Mar;113(3):436-42. PMID: 12616193 [PubMed - indexed for MEDLINE]
-  **152:** [Shipman CM, Croucher PJ.](#) [Related Articles, Links](#)
-  Osteoprotegerin is a soluble decoy receptor for tumor necrosis factor-related apoptosis-inducing ligand/Apo2 ligand and can function as a paracrine survival factor for human myeloma cells. *Cancer Res.* 2003 Mar 1;63(5):912-6. PMID: 12615702 [PubMed - indexed for MEDLINE]
-  **153:** [Tyson KL, Reynolds JL, McNair R, Zhang Q, Weissberg PL, Shanahan CM.](#) [Related Articles, Links](#)
-  Osteo/chondrocytic transcription factors and their target genes exhibit distinct patterns of expression in human arterial calcification. *Arterioscler Thromb Vasc Biol.* 2003 Mar 1;23(3):489-94. Epub 2003 Jan 30. PMID: 12615658 [PubMed - indexed for MEDLINE]
-  **154:** [Stajszczyk M.](#) [Related Articles, Links](#)
-  [Role of receptor activator of nuclear factor kappa B (RANK), its ligand (RANK-L) and osteoprotegerin (OPG) in bone metabolism] *Pol Arch Med Wewn.* 2002 Sep;108(3):915-24. Review. Polish. No abstract available. PMID: 12600190 [PubMed - indexed for MEDLINE]
-  **155:** [Lubberts E, van den Bersselaar L, Oppers-Walgreen B, Schwarzenberger P, Coenen-de Roo CJ, Kolls JK, Joosten LA, van den Berg WB.](#) [Related Articles, Links](#)
-  IL-17 promotes bone erosion in murine collagen-induced arthritis through loss of the receptor activator of NF-kappa B ligand/osteoprotegerin balance. *J Immunol.* 2003 Mar 1;170(5):2655-62. PMID: 12594294 [PubMed - indexed for MEDLINE]
-  **156:** [Lanzi R, Losa M, Villa I, Gatti E, Sirtori M, Dal Fiume C, Rubinacci A.](#) [Related Articles, Links](#)
-  GH replacement therapy increases plasma osteoprotegerin levels in GH-deficient adults. *Eur J Endocrinol.* 2003 Feb;148(2):185-91. PMID: 12590637 [PubMed - indexed for MEDLINE]
-  **157:** [Kudo O, Sabokbar A, Pocock A, Itonaga I, Fujikawa Y, Athanasou NA.](#) [Related Articles, Links](#)
-  Interleukin-6 and interleukin-11 support human osteoclast formation by a RANKL-independent mechanism. *Bone.* 2003 Jan;32(1):1-7. PMID: 12584029 [PubMed - indexed for MEDLINE]
-  **158:** [Rifas L, Arackal S, Weitzmann MN.](#) [Related Articles, Links](#)
-  Inflammatory T cells rapidly induce differentiation of human bone marrow stromal cells into mature osteoblasts.


J Cell Biochem. 2003 Mar 1;88(4):650-9.
PMID: 12577299 [PubMed - indexed for MEDLINE]


-  **159:** [Yu Q, Gu JX, Kovacs C, Freedman J, Thomas EK, Ostrowski MA.](#) [Related Articles, Links](#)


 Cooperation of TNF family members CD40 ligand, receptor activator of NF-kappa B ligand, and TNF-alpha in the activation of dendritic cells and the expansion of viral specific CD8+ T cell memory responses in HIV-1-infected and HIV-1-uninfected individuals.
J Immunol. 2003 Feb 15;170(4):1797-805.
PMID: 12574344 [PubMed - indexed for MEDLINE]


-  **160:** [Gallo J, Kaminck P, Ticha V, Rihakova P, Ditmar R.](#) [Related Articles, Links](#)


 Particle disease. A comprehensive theory of periprosthetic osteolysis: a review.
Biomed Pap Med Fac Univ Palacky Olomouc Czech Repub. 2002 Dec;146(2):21-8. Review.
PMID: 12572890 [PubMed - indexed for MEDLINE]


-  **161:** [Clohisy JC, Frazier E, Hirayama T, Abu-Amer Y.](#) [Related Articles, Links](#)

 RANKL is an essential cytokine mediator of polymethylmethacrylate particle-induced osteoclastogenesis.
J Orthop Res. 2003 Mar;21(2):202-12.
PMID: 12568950 [PubMed - indexed for MEDLINE]


-  **162:** [Cao J, Venton L, Sakata T, Halloran BP.](#) [Related Articles, Links](#)


 Expression of RANKL and OPG correlates with age-related bone loss in male C57BL/6 mice.
J Bone Miner Res. 2003 Feb;18(2):270-7.
PMID: 12568404 [PubMed - indexed for MEDLINE]


-  **163:** [Xing L, Carlson L, Story B, Tai Z, Keng P, Siebenlist U, Boyce BF.](#) [Related Articles, Links](#)

 Expression of either NF-kappaB p50 or p52 in osteoclast precursors is required for IL-1-induced bone resorption.
J Bone Miner Res. 2003 Feb;18(2):260-9.
PMID: 12568403 [PubMed - indexed for MEDLINE]


-  **164:** [Buckley KA, Fraser WD.](#) [Related Articles, Links](#)

 Receptor activator for nuclear factor kappaB ligand and osteoprotegerin: regulators of bone physiology and immune responses/potential therapeutic agents and biochemical markers.
Ann Clin Biochem. 2002 Nov;39(Pt 6):551-6. Review.
PMID: 12564836 [PubMed - indexed for MEDLINE]

-  **165:** [Oyajobi BO, Mundy GR.](#) [Related Articles, Links](#)

 Receptor activator of NF-kappaB ligand, macrophage inflammatory protein-1 alpha, and the proteasome: novel therapeutic targets in myeloma.
Cancer. 2003 Feb 1;97(3 Suppl):813-7.
PMID: 12548580 [PubMed - indexed for MEDLINE]

-  **166:** [Sordillo EM, Pearse RN.](#) [Related Articles, Links](#)

 RANK-Fc: a therapeutic antagonist for RANK-L in myeloma.
Cancer. 2003 Feb 1;97(3 Suppl):802-12. Review.
PMID: 12548579 [PubMed - indexed for MEDLINE]

-  **167:** [Kato I, Sato H, Kudo A.](#) [Related Articles, Links](#)

TRANCE together with IL-7 induces pre-B cells to proliferate.



Eur J Immunol. 2003 Feb;33(2):334-41.
PMID: 12548564 [PubMed - indexed for MEDLINE]

168: [Clohisy D.](#)

[Related Articles](#), [Links](#)



Cellular mechanisms of osteolysis.
J Bone Joint Surg Am. 2003;85-A Suppl 1:S4-6. No abstract available.
PMID: 12540662 [PubMed - indexed for MEDLINE]

169: [Keller ET.](#)

[Related Articles](#), [Links](#)



The role of osteoclastic activity in prostate cancer skeletal metastases.
Drugs Today (Barc). 2002 Feb;38(2):91-102. Review.
PMID: 12532187 [PubMed - indexed for MEDLINE]

170: [Woo KM, Choi Y, Ko SH, Ko JS, Oh KO, Kim KK.](#)

[Related Articles](#), [Links](#)



Osteoprotegerin is present on the membrane of osteoclasts isolated from mouse long bones.
Exp Mol Med. 2002 Nov 30;34(5):347-52.
PMID: 12526098 [PubMed - indexed for MEDLINE]

171: [Holliday LS, Weigus HG, Hanna J, Lee BS, Lu M, Jeffrey JJ, Gluck SL.](#)

[Related Articles](#), [Links](#)



Interstitial collagenase activity stimulates the formation of actin rings and ruffled membranes in mouse marrow osteoclasts.
Calcif Tissue Int. 2003 Mar;72(3):206-14. Epub 2003 Jan 15.
PMID: 12522662 [PubMed - indexed for MEDLINE]

172: [Suda T, Ueno Y, Fujii K, Shioki T.](#)

[Related Articles](#), [Links](#)



Vitamin D and bone.
J Cell Biochem. 2003 Feb 1;88(2):259-66. Review.
PMID: 12520524 [PubMed - indexed for MEDLINE]

173: [Berenson JR.](#)

[Related Articles](#), [Links](#)



Advances in the biology and treatment of myeloma bone disease.
Semin Oncol. 2002 Dec;29(6 Suppl 17):11-6. Review.
PMID: 12520479 [PubMed - indexed for MEDLINE]

174: [Haynes DR, Barg E, Crotti TN, Holding C, Weedon H, Atkins GJ, Zannettino A, Ahern MJ, Coleman M, Roberts-Thomson PJ, Kraan M, Tak PP, Smith MD.](#)

[Related Articles](#), [Links](#)



Osteoprotegerin expression in synovial tissue from patients with rheumatoid arthritis, spondyloarthropathies and osteoarthritis and normal controls.
Rheumatology (Oxford). 2003 Jan;42(1):123-34.
PMID: 12509625 [PubMed - indexed for MEDLINE]

175: [Elhasid R, Hofbauer LC, Ish-Shalom S, Ben-Arush M, Koc O, Rowe JM, Etzioni A.](#)

[Related Articles](#), [Links](#)













Familial severe congenital neutropenia associated with infantile osteoporosis: a new entity.
Am J Hematol. 2003 Jan;72(1):34-7.
PMID: 12508266 [PubMed - indexed for MEDLINE]

176: [Toraldo G, Roggia C, Qian WP, Pacifici R, Weitzmann MN.](#)


[Related Articles](#), [Links](#)



IL-7 induces bone loss in vivo by induction of receptor activator of nuclear factor kappa B ligand and tumor necrosis factor alpha from T cells.
Proc Natl Acad Sci U S A. 2003 Jan 7;100(1):125-30. Epub 2002 Dec 18.
PMID: 12490655 [PubMed - indexed for MEDLINE]

-  **177:** [Hasegawa T, Yoshimura Y, Kikuri T, Yawaka Y, Takeyama S, Matsumoto A, Oguchi H, Shirakawa T.](#) [Related Articles, Links](#)
Expression of receptor activator of NF-kappa B ligand and osteoprotegerin in culture of human periodontal ligament cells.
J Periodont Res. 2002 Dec;37(6):405-11.
 PMID: 12472833 [PubMed - indexed for MEDLINE]
-  **178:** [Liu D, Xu JK, Figliomeni L, Huang L, Pavlos NJ, Rogers M, Tan A, Price P, Zheng MH.](#) [Related Articles, Links](#)
Expression of RANKL and OPG mRNA in periodontal disease: possible involvement in bone destruction.
Int J Mol Med. 2003 Jan;11(1):17-21.
 PMID: 12469211 [PubMed - indexed for MEDLINE]
-  **179:** [Shimizu-Ishiura M, Kawana E, Sasaki T.](#) [Related Articles, Links](#)
Osteoprotegerin administration reduces femoral bone loss in ovariectomized mice via impairment of osteoclast structure and function.
J Electron Microsc (Tokyo). 2002;51(5):315-25.
 PMID: 12455916 [PubMed - indexed for MEDLINE]
-  **180:** [Hofbauer LC, Schoppet M.](#) [Related Articles, Links](#)
Osteoprotegerin deficiency and juvenile Paget's disease.
N Engl J Med. 2002 Nov 14;347(20):1622-3; author reply 1622-3. No abstract available.
 PMID: 12432053 [PubMed - indexed for MEDLINE]
-  **181:** [Lubberts E, Oppers-Walgreen B, Pettit AR, Van Den Bersselaar L, Joosten LA, Goldring SR, Gravallese EM, Van Den Berg WB.](#) [Related Articles, Links](#)
Increase in expression of receptor activator of nuclear factor kappaB at sites of bone erosion correlates with progression of inflammation in evolving collagen-induced arthritis.
Arthritis Rheum. 2002 Nov;46(11):3055-64.
 PMID: 12428250 [PubMed - indexed for MEDLINE]
-  **182:** [Stejskal D, Bartek J, Pastorkova R, Ruzicka V, Oral I, Horalik D.](#) [Related Articles, Links](#)
Osteoprotegerin, RANK, RANKL.
Biomed Pap Med Fac Univ Palacky Olomouc Czech Repub. 2001 Dec;145(2):61-4.
 Review.
 PMID: 12426773 [PubMed - indexed for MEDLINE]
-  **183:** [Sezer O, Heider U, Zavrski I, Kuhne CA, Hofbauer LC.](#) [Related Articles, Links](#)
RANK ligand and osteoprotegerin in myeloma bone disease.
Blood. 2003 Mar 15;101(6):2094-8. Epub 2002 Nov 07. Review.
 PMID: 12424190 [PubMed - indexed for MEDLINE]
-  **184:** [Hu Y, Yu S.](#) [Related Articles, Links](#)
Gene expression of osteoprotegerin and osteoclast differentiation factor in giant cell tumor.
Zhonghua Bing Li Xue Za Zhi. 2002 Apr;31(2):128-31.
 PMID: 12419159 [PubMed - indexed for MEDLINE]
-  **185:** [Zhao S, Zhang YK, Harris S, Ahuja SS, Bonewald LF.](#) [Related Articles, Links](#)
MLO-Y4 osteocyte-like cells support osteoclast formation and activation.
J Bone Miner Res. 2002 Nov;17(11):2068-79.
 PMID: 12412815 [PubMed - indexed for MEDLINE]
-  **186:** [Hegedus D, Ferencz V, Lakatos PL, Meszaros S, Lakatos P, Horvath C, Szalay F.](#) [Related Articles, Links](#)
Decreased bone density, elevated serum osteoprotegerin, and beta-cross-laps in Wilson disease.

J Bone Miner Res. 2002 Nov;17(11):1961-7.
PMID: 12412803 [PubMed - indexed for MEDLINE]


 **187:** [Roodman GD.](#)

[Related Articles](#), [Links](#)



Role of the bone marrow microenvironment in multiple myeloma.

J Bone Miner Res. 2002 Nov;17(11):1921-5.
PMID: 12412796 [PubMed - indexed for MEDLINE]


 **188:** [Yamada T, Yamazaki H, Yamane T, Yoshino M, Okuyama H, Tsuneto M, Kurino T, Hayashi S, Sakano S.](#)

[Related Articles](#), [Links](#)



Regulation of osteoclast development by Notch signaling directed to osteoclast precursors and through stromal cells.

Blood. 2003 Mar 15;101(6):2227-34. Epub 2002 Oct 31.
PMID: 12411305 [PubMed - indexed for MEDLINE]


 **189:** [Jung K, Lein M, Hosslin K, Grosse A, Roth S, Possinger K, Luftner D.](#)

[Related Articles](#), [Links](#)



Osteoprotegerin and receptor activator of nuclear factor-kappaB ligand (RANKL) in the serum of healthy adults.

Int J Biol Markers. 2002 Jul-Sep;17(3):177-81.
PMID: 12408468 [PubMed - indexed for MEDLINE]


 **190:** [Okada Y, Morimoto I, Ura K, Watanabe K, Eto S, Kumegawa M, Raisz L, Pilbeam C, Tanaka Y.](#)

[Related Articles](#), [Links](#)



Cell-to-Cell adhesion via intercellular adhesion molecule-1 and leukocyte function-associated antigen-1 pathway is involved in 1alpha,25(OH)2D3, PTH and IL-1alpha-induced osteoclast differentiation and bone resorption.

Endocr J. 2002 Aug;49(4):483-95.
PMID: 12402981 [PubMed - indexed for MEDLINE]


 **191:** [Chikatsu N, Takeuchi Y, Fukumoto S, Yano K, Fujita N, Tsuruo T, Fujita T.](#)

[Related Articles](#), [Links](#)



Clonal endothelial cells produce humoral factors that inhibit osteoclast-like cell formation in vitro.

Endocr J. 2002 Aug;49(4):439-47.
PMID: 12402976 [PubMed - indexed for MEDLINE]


 **192:** [Giuliani N, Colla S, Sala R, Moroni M, Lazzaretti M, La Monica S, Bonomini S, Hojden M, Sammarelli G, Barille S, Bataille R, Rizzoli V.](#)

[Related Articles](#), [Links](#)



Human myeloma cells stimulate the receptor activator of nuclear factor-kappa B ligand (RANKL) in T lymphocytes: a potential role in multiple myeloma bone disease.

Blood. 2002 Dec 15;100(13):4615-21. Epub 2002 Aug 08.
PMID: 12393684 [PubMed - indexed for MEDLINE]


 **193:** [Cremer I, Dieu-Nosjean MC, Marechal S, Dezutter-Dambuyant C, Goddard S, Adams D, Winter N, Menetrier-Caux C, Sautes-Fridman C, Fridman WH, Mueller CG.](#)

[Related Articles](#), [Links](#)



Long-lived immature dendritic cells mediated by TRANCE-RANK interaction.

Blood. 2002 Nov 15;100(10):3646-55. Epub 2002 Jul 05.
PMID: 12393586 [PubMed - indexed for MEDLINE]


 **194:** [Nagasawa T, Kobayashi H, Kiji M, Aramaki M, Mahanonda R, Kojima T, Murakami Y, Saito M, Morotome Y, Ishikawa I.](#)

[Related Articles](#), [Links](#)



LPS-stimulated human gingival fibroblasts inhibit the differentiation of monocytes into osteoclasts through the production of osteoprotegerin.

Clin Exp Immunol. 2002 Nov;130(2):338-44.
PMID: 12390325 [PubMed - indexed for MEDLINE]

 **195:** [Suda T, Shima N, Higashio K.](#)


[Related Articles, Links](#)



[Merger of bone biology and immunology]

Tanpakushitsu Kakusan Koso. 2002 Oct;47(13):1837-43. Review. Japanese. No abstract available.

PMID: 12385106 [PubMed - indexed for MEDLINE]

 **196:** [Gravallese EM.](#)

[Related Articles, Links](#)



Bone destruction in arthritis.

Ann Rheum Dis. 2002 Nov;61 Suppl 2:ii84-6. Review.

PMID: 12379632 [PubMed - indexed for MEDLINE]

 **197:** [Jones DH, Kong YY, Penninger JM.](#)


[Related Articles, Links](#)



Role of RANKL and RANK in bone loss and arthritis.

Ann Rheum Dis. 2002 Nov;61 Suppl 2:ii32-9. Review.

PMID: 12379618 [PubMed - indexed for MEDLINE]

 **198:** [Romas E, Sims NA, Hards DK, Lindsay M, Quinn JW, Ryan PF, Dunstan CR, Martin TJ, Gillespie MT.](#)


[Related Articles, Links](#)



Osteoprotegerin reduces osteoclast numbers and prevents bone erosion in collagen-induced arthritis.

Am J Pathol. 2002 Oct;161(4):1419-27.

PMID: 12368214 [PubMed - indexed for MEDLINE]

 **199:** [Fu Q, Jilka RL, Manolagas SC, O'Brien CA.](#)


[Related Articles, Links](#)



Parathyroid hormone stimulates receptor activator of NFkappa B ligand and inhibits osteoprotegerin expression via protein kinase A activation of cAMP-response element-binding protein.

J Biol Chem. 2002 Dec 13;277(50):48868-75. Epub 2002 Oct 02.

PMID: 12364326 [PubMed - indexed for MEDLINE]

 **200:** [DeLaurier A, Allen S, deFlandre C, Horton MA, Price JS.](#)


[Related Articles, Links](#)



Cytokine expression in feline osteoclastic resorptive lesions.

J Comp Pathol. 2002 Aug-Oct;127(2-3):169-77.

PMID: 12354528 [PubMed - indexed for MEDLINE]

 **201:** [Ferrer Canabate J, Tovar I, Martinez P.](#)


[Related Articles, Links](#)



[Osteoprotegrin and RANKL/RANK system: is it the future of bone metabolism?]

An Med Interna. 2002 Aug;19(8):385-88. Review. Spanish. No abstract available.

PMID: 12244784 [PubMed - indexed for MEDLINE]

 **202:** [Williamson E, Bilsborough JM, Viney JL.](#)


[Related Articles, Links](#)



Regulation of mucosal dendritic cell function by receptor activator of NF-kappa B (RANK)/RANK ligand interactions: impact on tolerance induction.

J Immunol. 2002 Oct 1;169(7):3606-12.

PMID: 12244151 [PubMed - indexed for MEDLINE]

 **203:** [Price PA, Junc HH, Buckley JR, Williamson MK.](#)


[Related Articles, Links](#)



SB 242784, a selective inhibitor of the osteoclastic V-H+ATPase, inhibits arterial calcification in the rat.

Circ Res. 2002 Sep 20;91(6):547-52.

PMID: 12242274 [PubMed - indexed for MEDLINE]

 **204:** [Hofbauer LC, Maisch B, Schaefer JR.](#)


















[Related Articles, Links](#)





















High bone density due to a mutation in LDL-receptor-related protein 5.

N Engl J Med. 2002 Sep 19;347(12):943-4; author reply 943-4. No abstract available.

PMID: 12240686 [PubMed - indexed for MEDLINE]

-  **205:** [Shiotani A, Takami M, Itoh K, Shibasaki Y, Sasaki T.](#) [Related Articles, Links](#)
-  Regulation of osteoclast differentiation and function by receptor activator of NFkB ligand and osteoprotegerin.
Anat Rec. 2002 Oct 1;268(2):137-46.
PMID: 12221720 [PubMed - indexed for MEDLINE]
-  **206:** [Palmqvist P, Persson E, Conaway HH, Lerner UH.](#) [Related Articles, Links](#)
-  IL-6, leukemia inhibitory factor, and oncostatin M stimulate bone resorption and regulate the expression of receptor activator of NF-kappa B ligand, osteoprotegerin, and receptor activator of NF-kappa B in mouse calvariae.
J Immunol. 2002 Sep 15;169(6):3353-62.
PMID: 12218157 [PubMed - indexed for MEDLINE]
-  **207:** [Rubin J, Ackert-Bicknell CL, Zhu L, Fan X, Murphy TC, Nanes MS, Marcus R, Holloway L, Beamer WG, Rosen CJ.](#) [Related Articles, Links](#)
-  IGF-I regulates osteoprotegerin (OPG) and receptor activator of nuclear factor-kappaB ligand in vitro and OPG in vivo.
J Clin Endocrinol Metab. 2002 Sep;87(9):4273-9.
PMID: 12213884 [PubMed - indexed for MEDLINE]
-  **208:** [Kondo H, Guo J, Bringham FR.](#) [Related Articles, Links](#)
-  Cyclic adenosine monophosphate/protein kinase A mediates parathyroid hormone/parathyroid hormone-related protein receptor regulation of osteoclastogenesis and expression of RANKL and osteoprotegerin mRNAs by marrow stromal cells.
J Bone Miner Res. 2002 Sep;17(9):1667-79.
PMID: 12211438 [PubMed - indexed for MEDLINE]
-  **209:** [Hofbauer LC, Kluger S, Kubne CA, Dunstan CR, Burchert A, Schoppet M, Zielke A, Heufelder AE.](#) [Related Articles, Links](#)
-  Detection and characterization of RANK ligand and osteoprotegerin in the thyroid gland.
J Cell Biochem. 2002;86(4):642-50.
PMID: 12210731 [PubMed - indexed for MEDLINE]
-  **210:** [Juji T, Hertz M, Aoki K, Horie D, Ohya K, Gautam A, Mouritsen S, Oda H, Nakamura K, Tanaka S.](#) [Related Articles, Links](#)
-  A novel therapeutic vaccine approach, targeting RANKL, prevents bone destruction in bone-related disorders.
J Bone Miner Metab. 2002;20(5):266-8. Review. No abstract available.
PMID: 12203031 [PubMed - indexed for MEDLINE]
-  **211:** [Fujita T, Shiba H, Sakata M, Uchida Y, Nakamura S, Kurihara H.](#) [Related Articles, Links](#)
-  SPARC stimulates the synthesis of OPG/OCIF, MMP-2 and DNA in human periodontal ligament cells.
J Oral Pathol Med. 2002 Jul;31(6):345-52. Erratum in: J Oral Pathol Med 2002 Sep;31(8):504.
PMID: 12201246 [PubMed - indexed for MEDLINE]
-  **212:** [Lee SK, Kalinowski J, Jastrzebski S, Lorenzo JA.](#) [Related Articles, Links](#)
-  1,25(OH)₂ vitamin D₃-stimulated osteoclast formation in spleen-osteoblast cocultures is mediated in part by enhanced IL-1 alpha and receptor activator of NF-kappa B ligand production in osteoblasts.
J Immunol. 2002 Sep 1;169(5):2374-80.
PMID: 12193704 [PubMed - indexed for MEDLINE]
-  **213:** [Teng YT.](#) [Related Articles, Links](#)

-  **Mixed periodontal Th1-Th2 cytokine profile in *Actinobacillus actinomycetemcomitans*-specific osteoprotegerin ligand (or RANK-L)-mediated alveolar bone destruction in vivo.**
Infect Immun. 2002 Sep;70(9):5269-73.
PMID: 12183580 [PubMed - indexed for MEDLINE]
-  **214:** [Geoffroy V, Kneissel M, Fournier B, Boyde A, Matthias P.](#) [Related Articles, Links](#)
-  **High bone resorption in adult aging transgenic mice overexpressing *cbfa1/runx2* in cells of the osteoblastic lineage.**
Mol Cell Biol. 2002 Sep;22(17):6222-33.
PMID: 12167715 [PubMed - indexed for MEDLINE]
-  **215:** [Lorget F, Clough J, Oliveira M, Daury MC, Sabokbar A, Offord E.](#) [Related Articles, Links](#)
-  **Lactoferrin reduces in vitro osteoclast differentiation and resorbing activity.**
Biochem Biophys Res Commun. 2002 Aug 16;296(2):261-6.
PMID: 12163011 [PubMed - indexed for MEDLINE]
-  **216:** [Mundy GR.](#) [Related Articles, Links](#)
-  **Metastasis to bone: causes, consequences and therapeutic opportunities.**
Nat Rev Cancer. 2002 Aug;2(8):584-93. Review.
PMID: 12154351 [PubMed - indexed for MEDLINE]
-  **217:** [Grisar J, Bernecker PM, Aringer M, Redlich K, Sedlak M, Wolozczuk W, Spitzauer S, Grampp S, Kainberger F, Ebner W, Smolen JS, Pietschmann P.](#) [Related Articles, Links](#)
-  **Ankylosing spondylitis, psoriatic arthritis, and reactive arthritis show increased bone resorption, but differ with regard to bone formation.**
J Rheumatol. 2002 Jul;29(7):1430-6.
PMID: 12136902 [PubMed - indexed for MEDLINE]
-  **218:** [Whyte MP, Obrecht SE, Finnegan PM, Jones JL, Podgornik MN, McAlister WH, Mumm S.](#) [Related Articles, Links](#)
-  **Osteoprotegerin deficiency and juvenile Paget's disease.**
N Engl J Med. 2002 Jul 18;347(3):175-84.
PMID: 12124406 [PubMed - indexed for MEDLINE]
-  **219:** [Ueland T, Bollerslev J, Mosekilde L.](#) [Related Articles, Links](#)
-  **[Osteoclast function is regulated by neighbouring osteoblasts. Osteoprotegerin, RANK and RANK ligand constitute a unique regulatory system for bone resorption with important pathophysiological and therapeutic aspects]**
Ugeskr Laeger. 2002 Jul 1;164(27):3526-30. Review. Danish.
PMID: 12116680 [PubMed - indexed for MEDLINE]
-  **220:** [Canalis E, Delany AM.](#) [Related Articles, Links](#)
-  **Mechanisms of glucocorticoid action in bone.**
Ann N Y Acad Sci. 2002 Jun;966:73-81. Review.
PMID: 12114261 [PubMed - indexed for MEDLINE]
-  **221:** [Lee SK, Lorenzo JA.](#) [Related Articles, Links](#)
-  **Regulation of receptor activator of nuclear factor-kappa B ligand and osteoprotegerin mRNA expression by parathyroid hormone is predominantly mediated by the protein kinase A pathway in murine bone marrow cultures.**
Bone. 2002 Jul;31(1):252-9.
PMID: 12110442 [PubMed - indexed for MEDLINE]

 **222:** [Koyama H, Nakade O, Takada Y, Kaku T, Lau KH.](#)


[Related Articles, Links](#)



Melatonin at pharmacologic doses increases bone mass by suppressing resorption through down-regulation of the RANKL-mediated osteoclast formation and activation.

J Bone Miner Res. 2002 Jul;17(7):1219-29.

PMID: 12096835 [PubMed - indexed for MEDLINE]

 **223:** [Zou W, Bar-Shavit Z.](#)


[Related Articles, Links](#)



Dual modulation of osteoclast differentiation by lipopolysaccharide.

J Bone Miner Res. 2002 Jul;17(7):1211-8.

PMID: 12096834 [PubMed - indexed for MEDLINE]

 **224:** [Xing L, Bushnell TP, Carlson L, Tai Z, Tondravi M, Siebenlist U, Young F, Boyce BF.](#)


[Related Articles, Links](#)



NF-kappaB p50 and p52 expression is not required for RANK-expressing osteoclast progenitor formation but is essential for RANK- and cytokine-mediated osteoclastogenesis.

J Bone Miner Res. 2002 Jul;17(7):1200-10.

PMID: 12096833 [PubMed - indexed for MEDLINE]

 **225:** [Price PA, Caputo JM, Williamson MK.](#)


[Related Articles, Links](#)



Bone origin of the serum complex of calcium, phosphate, fetuin, and matrix Gla protein: biochemical evidence for the cancellous bone-remodeling compartment.

J Bone Miner Res. 2002 Jul;17(7):1171-9.

PMID: 12096831 [PubMed - indexed for MEDLINE]

 **226:** [Kim YH, Kim GS, Jeong-Hwa B.](#)


[Related Articles, Links](#)



Inhibitory action of bisphosphonates on bone resorption does not involve the regulation of RANKL and OPG expression.

Exp Mol Med. 2002 May 31;34(2):145-51.

PMID: 12085990 [PubMed - indexed for MEDLINE]

 **227:** [Zhang J, Fu M, Myles D, Zhu X, Du J, Cao X, Chen YE.](#)


[Related Articles, Links](#)



PDGF induces osteoprotegerin expression in vascular smooth muscle cells by multiple signal pathways.

FEBS Lett. 2002 Jun 19;521(1-3):180-4.

PMID: 12067713 [PubMed - indexed for MEDLINE]

 **228:** [Ueland T, Bollerslev J, Flyvbjerg A, Hansen TB, Vahl N, Mosekilde L.](#)


[Related Articles, Links](#)



Effects of 12 months of GH treatment on cortical and trabecular bone content of IGFs and OPG in adults with acquired GH deficiency: a double-blind, randomized, placebo-controlled study.

J Clin Endocrinol Metab. 2002 Jun;87(6):2760-3.

PMID: 12050246 [PubMed - indexed for MEDLINE]

 **229:** [Lossdorfer S, Gotz W, Jager A.](#)


[Related Articles, Links](#)



Immunohistochemical localization of receptor activator of nuclear factor kappaB (RANK) and its ligand (RANKL) in human deciduous teeth.

Calcif Tissue Int. 2002 Jul;71(1):45-52. Epub 2002 Jun 04.

PMID: 12043011 [PubMed - indexed for MEDLINE]

 **230:** [Li X, Tomita M, Pilbeam CC, Breyer RM, Raisz LG.](#)


[Related Articles, Links](#)



Prostaglandin receptor EP2 mediates PGE2 stimulated hypercalcemia in mice in vivo.

Prostaglandins Other Lipid Mediat. 2002 Apr;67(3-4):173-80.

PMID: 12013525 [PubMed - indexed for MEDLINE]


-  **231:** [Granchi D, Cenni E, Savarino L, Ciapetti G, Forbicini G, Vancini M, Maini C, Baldini N, Giunti A](#) [Related Articles](#), [Links](#)



Bone cement extracts modulate the osteoprotegerin/osteoprotegerin-ligand expression in MG63 osteoblast-like cells.

Biomaterials. 2002 Jun;23(11):2359-65.

PMID: 12013183 [PubMed - indexed for MEDLINE]


-  **232:** [Jiang Y, Mehta CK, Hsu TY, Alsulaimani FF](#) [Related Articles](#), [Links](#)



Bacteria induce osteoclastogenesis via an osteoblast-independent pathway.

Infect Immun. 2002 Jun;70(6):3143-8.

PMID: 12011008 [PubMed - indexed for MEDLINE]

-  **233:** [Iida-Klein A, Zhou H, Lu SS, Levine LR, Ducayen-Knowles M, Dempster DW, Nieves J, Lindsay R](#) [Related Articles](#), [Links](#)



Anabolic action of parathyroid hormone is skeletal site specific at the tissue and cellular levels in mice.

J Bone Miner Res. 2002 May;17(5):808-16.

PMID: 12009011 [PubMed - indexed for MEDLINE]


-  **234:** [Bosshart H](#) [Related Articles](#), [Links](#)



Expression of survival receptors in Hodgkin disease cell lines.

Blood. 2002 May 1;99(9):3484-5; author reply 3485-6. No abstract available.

PMID: 12001908 [PubMed - indexed for MEDLINE]


-  **235:** [de Hooge AS, van de Loo FA, Bennink MB, de Jong DS, Arntz OJ, Lubberts E, Richards CD, van den Berg WB](#) [Related Articles](#), [Links](#)



Adenoviral transfer of murine oncostatin M elicits periosteal bone apposition in knee joints of mice, despite synovial inflammation and up-regulated expression of interleukin-6 and receptor activator of nuclear factor-kappa B ligand.

Am J Pathol. 2002 May;160(5):1733-43.

PMID: 12000725 [PubMed - indexed for MEDLINE]


-  **236:** [Gruber R, Karreth F, Fischer MB, Watzek G](#) [Related Articles](#), [Links](#)



Platelet-released supernatants stimulate formation of osteoclast-like cells through a prostaglandin/RANKL-dependent mechanism.

Bone. 2002 May;30(5):726-32.

PMID: 11996911 [PubMed - indexed for MEDLINE]

-  **237:** [Corey E, Quinn JE, Bladou F, Brown LG, Roudier MP, Brown JM, Buhler KR, Vessella RL](#) [Related Articles](#), [Links](#)



Establishment and characterization of osseous prostate cancer models: intra-tibial injection of human prostate cancer cells.

Prostate. 2002 Jun 1;52(1):20-33.

PMID: 11992617 [PubMed - indexed for MEDLINE]

-  **238:** [Schoppet M, Preissner KT, Hofbauer LC](#) [Related Articles](#), [Links](#)



RANK ligand and osteoprotegerin: paracrine regulators of bone metabolism and vascular function.

Arterioscler Thromb Vasc Biol. 2002 Apr 1;22(4):549-53. Review.

PMID: 11950689 [PubMed - indexed for MEDLINE]



















-  **239:** [Li X, Pilbeam CC, Pan L, Breyer RM, Raisz LG](#) [Related Articles](#), [Links](#)






























Effects of prostaglandin E2 on gene expression in primary osteoblastic cells from prostaglandin receptor knockout mice.

Bone. 2002 Apr;30(4):567-73.


PMID: 11934647 [PubMed - indexed for MEDLINE]

-  **240:** [Kanematsu M, Yoshimura K, Takaoki M, Sato A.](#) [Related Articles, Links](#)
 Vector-averaged gravity regulates gene expression of receptor activator of NF-kappaB (RANK) ligand and osteoprotegerin in bone marrow stromal cells via cyclic AMP/protein kinase A pathway.
 Bone. 2002 Apr;30(4):553-8.
 PMID: 11934645 [PubMed - indexed for MEDLINE]
-  **241:** [Oshiro T, Shiotani A, Shibasaki Y, Sasaki T.](#) [Related Articles, Links](#)
 Osteoclast induction in periodontal tissue during experimental movement of incisors in osteoprotegerin-deficient mice.
 Anat Rec. 2002 Apr 1;266(4):218-25.
 PMID: 11920384 [PubMed - indexed for MEDLINE]
-  **242:** [Roux S, Meignin V, Quillard J, Meduri G, Guiochon-Mantel A, Ferman J, Milgrom E, Mariette X.](#) [Related Articles, Links](#)
 RANK (receptor activator of nuclear factor-kappaB) and RANKL expression in multiple myeloma.
 Br J Haematol. 2002 Apr;117(1):86-92.
 PMID: 11918537 [PubMed - indexed for MEDLINE]
-  **243:** [Mori H, Kitazawa R, Mizuki S, Nose M, Maeda S, Kitazawa S.](#) [Related Articles, Links](#)
 RANK ligand, RANK, and OPG expression in type II collagen-induced arthritis mouse.
 Histochem Cell Biol. 2002 Mar;117(3):283-92. Epub 2002 Jan 26.
 PMID: 11914926 [PubMed - indexed for MEDLINE]
-  **244:** [Feige U.](#) [Related Articles, Links](#)
 Osteoprotegerin.
 Ann Rheum Dis. 2001 Nov;60 Suppl 3:iii81-4. Review. No abstract available.
 PMID: 11890662 [PubMed - indexed for MEDLINE]
-  **245:** [Kazama JJ, Shigematsu T, Yano K, Tsuda E, Miura M, Iwasaki Y, Kawaguchi Y, Gejyo F, Kurokawa K, Fukagawa M.](#) [Related Articles, Links](#)
 Increased circulating levels of osteoclastogenesis inhibitory factor (osteoprotegerin) in patients with chronic renal failure.
 Am J Kidney Dis. 2002 Mar;39(3):525-32.
 PMID: 11877571 [PubMed - indexed for MEDLINE]
-  **246:** [Fauchoux C, Horton MA, Price JS.](#) [Related Articles, Links](#)
 Nuclear localization of type I parathyroid hormone/parathyroid hormone-related protein receptors in deer antler osteoclasts: evidence for parathyroid hormone-related protein and receptor activator of NF-kappaB-dependent effects on osteoclast formation in regenerating mammalian bone.
 J Bone Miner Res. 2002 Mar;17(3):455-64.
 PMID: 11874237 [PubMed - indexed for MEDLINE]
-  **247:** [Good CR, O'Keefe RJ, Puzas JE, Schwarz EM, Rosier RN.](#) [Related Articles, Links](#)
 Immunohistochemical study of receptor activator of nuclear factor kappa-B ligand (RANK-L) in human osteolytic bone tumors.
 J Surg Oncol. 2002 Mar;79(3):174-9.
 PMID: 11870668 [PubMed - indexed for MEDLINE]
-  **248:** [Green EA, Choi Y, Flavell RA.](#) [Related Articles, Links](#)
 Pancreatic lymph node-derived CD4(+)CD25(+) Treg cells: highly potent regulators of diabetes that require TRANCE-RANK signals.
 Immunity. 2002 Feb;16(2):183-91.
 PMID: 11869680 [PubMed - indexed for MEDLINE]

-  **249:** [Roux S, Amazit L, Meduri G, Guiochon-Mantel A, Milgrom E, Mariette X.](#) Related Articles, Links
-  **RANK (receptor activator of nuclear factor kappa B) and RANK ligand are expressed in giant cell tumors of bone.**
Am J Clin Pathol. 2002 Feb;117(2):210-6.
PMID: 11863217 [PubMed - indexed for MEDLINE]
-  **250:** [Theill LE, Boyle WJ, Penninger JM.](#) Related Articles, Links
-  **RANK-L and RANK: T cells, bone loss, and mammalian evolution.**
Annu Rev Immunol. 2002;20:795-823. Epub 2001 Oct 04. Review.
PMID: 11861618 [PubMed - indexed for MEDLINE]
-  **251:** [Wise GE, Yao S, Zhang Q, Ren Y.](#) Related Articles, Links
-  **Inhibition of osteoclastogenesis by the secretion of osteoprotegerin in vitro by rat dental follicle cells and its implications for tooth eruption.**
Arch Oral Biol. 2002 Mar;47(3):247-54.
PMID: 11839361 [PubMed - indexed for MEDLINE]
-  **252:** [Kubota K, Sakikawa C, Katsumata M, Nakamura T, Wakabayashi K.](#) Related Articles, Links
-  **Platelet-derived growth factor BB secreted from osteoclasts acts as an osteoblastogenesis inhibitory factor.**
J Bone Miner Res. 2002 Feb;17(2):257-65.
PMID: 11811556 [PubMed - indexed for MEDLINE]
-  **253:** [Kanzaki H, Chiba M, Shimizu Y, Mitani H.](#) Related Articles, Links
-  **Periodontal ligament cells under mechanical stress induce osteoclastogenesis by receptor activator of nuclear factor kappaB ligand up-regulation via prostaglandin E2 synthesis.**
J Bone Miner Res. 2002 Feb;17(2):210-20.
PMID: 11811551 [PubMed - indexed for MEDLINE]
-  **254:** [Holloway WR, Collier FM, Aitken CJ, Myers DE, Hodge JM, Malakellis M, Gough TJ, Collier GR, Nicholson GC.](#) Related Articles, Links
-  **Leptin inhibits osteoclast generation.**
J Bone Miner Res. 2002 Feb;17(2):200-9.
PMID: 11811550 [PubMed - indexed for MEDLINE]
-  **255:** [Mizukami J, Takaesu G, Akatsuka H, Sakurai H, Ninomiya-Tsuji J, Matsumoto K, Sakurai N.](#) Related Articles, Links
-  **Receptor activator of NF-kappaB ligand (RANKL) activates TAK1 mitogen-activated protein kinase kinase kinase through a signaling complex containing RANK, TAB2, and TRAF6.**
Mol Cell Biol. 2002 Feb;22(4):992-1000.
PMID: 11809792 [PubMed - indexed for MEDLINE]
-  **256:** [Suda K, Woo JT, Takami M, Sexton PM, Nagai K.](#) Related Articles, Links
-  **Lipopolysaccharide supports survival and fusion of preosteoclasts independent of TNF-alpha, IL-1, and RANKL.**
J Cell Physiol. 2002 Jan;190(1):101-8.
PMID: 11807816 [PubMed - indexed for MEDLINE]
-  **257:** [Ramalho AC, Jullienne A, Couttet P, Graulet AM, Morieux C, de Vernejoul MC, Cohen-Solal ME.](#) Related Articles, Links
-  **Effect of oestradiol on cytokine production in immortalized human marrow stromal cell lines.**
Cytokine. 2001 Nov 21;16(4):126-30.
PMID: 11792122 [PubMed - indexed for MEDLINE]

-  **258:** [Nosaka K, Miyamoto T, Sakai T, Mitsuya H, Suda T, Matsuoka M](#) [Related Articles](#), [Links](#)
Mechanism of hypercalcemia in adult T-cell leukemia: overexpression of receptor activator of nuclear factor kappaB ligand on adult T-cell leukemia cells.
 Blood. 2002 Jan 15;99(2):634-40.
 PMID: 11781248 [PubMed - indexed for MEDLINE]
-  **259:** [Wang X, Wu J, Shidoji Y, Muto Y, Ohishi N, Yagi K, Ikegami S, Shinki T, Udagawa N, Suda T, Ishimi Y](#) [Related Articles](#), [Links](#)
Effects of geranylgeranoic acid in bone: induction of osteoblast differentiation and inhibition of osteoclast formation.
 J Bone Miner Res. 2002 Jan;17(1):91-100.
 PMID: 11771673 [PubMed - indexed for MEDLINE]
-  **260:** [Komuro H, Olee T, Kuhn K, Quach J, Brinson DC, Shikhman A, Valbracht J, Creighton-Achermann L, Lotz M](#) [Related Articles](#), [Links](#)
The osteoprotegerin/receptor activator of nuclear factor kappaB/receptor activator of nuclear factor kappaB ligand system in cartilage.
 Arthritis Rheum. 2001 Dec;44(12):2768-76.
 PMID: 11762937 [PubMed - indexed for MEDLINE]
-  **261:** [Ito S, Wakabayashi K, Ubukata O, Hayashi S, Okada F, Hata T](#) [Related Articles](#), [Links](#)
Crystal structure of the extracellular domain of mouse RANK ligand at 2.2-A resolution.
 J Biol Chem. 2002 Feb 22;277(8):6631-6. Epub 2001 Nov 30.
 PMID: 11733492 [PubMed - indexed for MEDLINE]
-  **262:** [Chung H, Kang YS, Hwang CS, Moon IK, Yim CH, Choi KH, Han KO, Jang HC, Yoon HK, Han IK](#) [Related Articles](#), [Links](#)
Deflazacort increases osteoclast formation in mouse bone marrow culture and the ratio of RANKL/OPG mRNA expression in marrow stromal cells.
 J Korean Med Sci. 2001 Dec;16(6):769-73.
 PMID: 11748360 [PubMed - indexed for MEDLINE]
-  **263:** [Cao Y, Bonizzi G, Seagroves TN, Greten FR, Johnson R, Schmidt EV, Karin M](#) [Related Articles](#), [Links](#)
IKKalpha provides an essential link between RANK signaling and cyclin D1 expression during mammary gland development.
 Cell. 2001 Dec 14;107(6):763-75.
 PMID: 11747812 [PubMed - indexed for MEDLINE]
-  **264:** [Dhore CR, Cleutjens JP, Lutgens E, Cleutjens KB, Geusens PP, Kitslaar PJ, Tordoir JH, Spronk HM, Vermeer C, Daemen MJ](#) [Related Articles](#), [Links](#)
Differential expression of bone matrix regulatory proteins in human atherosclerotic plaques.
 Arterioscler Thromb Vasc Biol. 2001 Dec;21(12):1998-2003.
 PMID: 11742876 [PubMed - indexed for MEDLINE]
-  **265:** [Croucher PJ, Shipman CM, Lippitt J, Perry M, Asosingh K, Hijzen A, Brabbs AC, van Beek EJ, Holen I, Skerry TM, Dunstan CR, Russell GR, Van Camp B, Vanderkerken K](#) [Related Articles](#), [Links](#)
Osteoprotegerin inhibits the development of osteolytic bone disease in multiple myeloma.
 Blood. 2001 Dec 15;98(13):3534-40.
 PMID: 11739154 [PubMed - indexed for MEDLINE]
-  **266:** [Giuliani N, Bataille R, Mancini C, Lazzaretti M, Barille S](#) [Related Articles](#), [Links](#)
Myeloma cells induce imbalance in the osteoprotegerin/osteoprotegerin ligand system in the human bone marrow environment.

Blood. 2001 Dec 15;98(13):3527-33.
PMID: 11739153 [PubMed - indexed for MEDLINE]

-  **267:** [Lindberg MK, Erlandsson M, Alatalo SL, Windahl S, Andersson G, Halleen JM, Carlsten H, Gustafsson JA, Ohlsson C.](#) [Related Articles, Links](#)



Estrogen receptor alpha, but not estrogen receptor beta, is involved in the regulation of the OPG/RANKL (osteoprotegerin/receptor activator of NF-kappa B ligand) ratio and serum interleukin-6 in male mice.


J Endocrinol. 2001 Dec;171(3):425-33.
PMID: 11739008 [PubMed - indexed for MEDLINE]

-  **268:** [Kim HJ, Yoon MJ, Lee J, Penninger JM, Kong YY.](#) [Related Articles, Links](#)



Osteoprotegerin ligand induces beta-casein gene expression through the transcription factor CCAAT/enhancer-binding protein beta.

J Biol Chem. 2002 Feb 15;277(7):5339-44. Epub 2001 Nov 28.
PMID: 11726661 [PubMed - indexed for MEDLINE]

-  **269:** [Ueland T, Bollerslev J, Godang K, Muller F, Froland SS, Aukrust P.](#) [Related Articles, Links](#)



Increased serum osteoprotegerin in disorders characterized by persistent immune activation or glucocorticoid excess--possible role in bone homeostasis.

Eur J Endocrinol. 2001 Dec;145(6):685-90.
PMID: 11720891 [PubMed - indexed for MEDLINE]

-  **270:** [Hofbauer LC, Schoppet M.](#) [Related Articles, Links](#)



Serum measurement of osteoprotegerin--clinical relevance and potential applications.


Eur J Endocrinol. 2001 Dec;145(6):681-3. No abstract available.
PMID: 11720890 [PubMed - indexed for MEDLINE]

-  **271:** [Khosla S.](#) [Related Articles, Links](#)



Minireview: the OPG/RANKL/RANK system.


Endocrinology. 2001 Dec;142(12):5050-5. Review.
PMID: 11713196 [PubMed - indexed for MEDLINE]

-  **272:** [Chikazu D, Katagiri M, Ogasawara T, Ogata N, Shimoaka T, Takato T, Nakamura K, Kawaguchi H.](#) [Related Articles, Links](#)



Regulation of osteoclast differentiation by fibroblast growth factor 2: stimulation of receptor activator of nuclear factor kappaB ligand/osteoclast differentiation factor expression in osteoblasts and inhibition of macrophage colony-stimulating factor function in osteoclast precursors.

J Bone Miner Res. 2001 Nov;16(11):2074-81.
PMID: 11697804 [PubMed - indexed for MEDLINE]

-  **273:** [Fiumara P, Snell V, Li Y, Mukhopadhyay A, Younes M, Gillenwater AM, Cabanillas F, Aggarwal BB, Younes A.](#) [Related Articles, Links](#)



Functional expression of receptor activator of nuclear factor kappaB in Hodgkin disease cell lines.


Blood. 2001 Nov 1;98(9):2784-90.
PMID: 11675352 [PubMed - indexed for MEDLINE]

-  **274:** [Lean JM, Fuller K, Chambers TJ.](#) [Related Articles, Links](#)



FLT3 ligand can substitute for macrophage colony-stimulating factor in support of osteoclast differentiation and function.

Blood. 2001 Nov 1;98(9):2707-13.
PMID: 11675341 [PubMed - indexed for MEDLINE]


 **275:** [Boissy P, Destaing O, Jurdic P.](#)

[Related Articles](#), [Links](#)



RANKL induces formation of avian osteoclasts from macrophages but not from macrophage polykaryons.

Biochem Biophys Res Commun. 2001 Oct 26;288(2):340-6.
PMID: 11606048 [PubMed - indexed for MEDLINE]


 **276:** [Kawahara N, Kurata A, Hakamatsuka T, Sekita S, Satake M.](#)

[Related Articles](#), [Links](#)



Two novel cucurbitacins, neocucurbitacins A and B, from the Brazilian folk medicine "Buchinha" (Luffa operculata) and their effect on PEBP2alphaA and OCIF gene expression in a human osteoblast-like Saos-2 cell line.

Chem Pharm Bull (Tokyo). 2001 Oct;49(10):1377-9.
PMID: 11605678 [PubMed - indexed for MEDLINE]


 **277:** [Rosa-Ranai M, de la Cruz DA, Lorena-Rubio Y, Larrea F.](#)

[Related Articles](#), [Links](#)



[New paradigms in the regulation of bone metabolism]

Rev Invest Clin. 2001 Jul-Aug;53(4):362-9. Spanish.
PMID: 11599485 [PubMed - indexed for MEDLINE]


 **278:** [Choi SJ, Kurihara N, Oba Y, Roodman GD.](#)

[Related Articles](#), [Links](#)



Osteoclast inhibitory peptide 2 inhibits osteoclast formation via its C-terminal fragment.

J Bone Miner Res. 2001 Oct;16(10):1804-11.
PMID: 11585344 [PubMed - indexed for MEDLINE]

 **279:** [Quinn JM, Itoh K, Udagawa N, Hausler K, Yasuda H, Shima N,](#)


[Related Articles](#), [Links](#)

[Mizuno A, Higashio K, Takahashi N, Suda T, Martin TJ, Gillespie MT.](#)



Transforming growth factor beta affects osteoclast differentiation via direct and indirect actions.

J Bone Miner Res. 2001 Oct;16(10):1787-94.
PMID: 11585342 [PubMed - indexed for MEDLINE]

 **280:** [Pearse RN, Sordillo EM, Yaccoby S, Wong BR, Liao DF,](#)


[Related Articles](#), [Links](#)

[Colman N, Michaeli J, Epstein J, Choi Y.](#)



Multiple myeloma disrupts the TRANCE/ osteoprotegerin cytokine axis to trigger bone destruction and promote tumor progression.

Proc Natl Acad Sci U S A. 2001 Sep 25;98(20):11581-6. Epub 2001 Sep 18.
PMID: 11562486 [PubMed - indexed for MEDLINE]


 **281:** [Tintut Y, Demer LL.](#)

[Related Articles](#), [Links](#)



Recent advances in multifactorial regulation of vascular calcification.

Curr Opin Lipidol. 2001 Oct;12(5):555-60. Review.
PMID: 11561176 [PubMed - indexed for MEDLINE]


 **282:** [Takeshita S, Arai S, Kudo A.](#)

[Related Articles](#), [Links](#)



Identification and characterization of mouse bone marrow stromal cell lines immortalized by temperature-sensitive SV40 T antigen: supportive activity for osteoclast differentiation.

Bone. 2001 Sep;29(3):236-41.
PMID: 11557367 [PubMed - indexed for MEDLINE]



















 **283:** [Raffai RL, Dong LM, Farese RV Jr, Weisgraber KH.](#)

[Related Articles](#), [Links](#)



Introduction of human apolipoprotein E4 "domain interaction" into mouse apolipoprotein E.


Proc Natl Acad Sci U S A. 2001 Sep 25;98(20):11587-91. Epub 2001 Sep 11.
PMID: 11553788 [PubMed - indexed for MEDLINE]

-  **284:** [Haynes DR, Crotti TN, Potter AE, Loric M, Atkins GJ, Howie DW, Findlay DM.](#) [Related Articles, Links](#)
-  The osteoclastogenic molecules RANKL and RANK are associated with periprosthetic osteolysis.
J Bone Joint Surg Br. 2001 Aug;83(6):902-11. Review.
PMID: 11521937 [PubMed - indexed for MEDLINE]
-  **285:** [Myoung H, Park JY, Choung PH.](#) [Related Articles, Links](#)
-  Effects of a bisphosphonate on the expression of bone specific genes after autogenous free bone grafting in rats.
J Periodontal Res. 2001 Aug;36(4):244-51.
PMID: 11519698 [PubMed - indexed for MEDLINE]
-  **286:** [Hofbauer LC, Neubauer A, Heufelder AE.](#) [Related Articles, Links](#)
-  Receptor activator of nuclear factor-kappaB ligand and osteoprotegerin: potential implications for the pathogenesis and treatment of malignant bone diseases.
Cancer. 2001 Aug 1;92(3):460-70. Review.
PMID: 11505389 [PubMed - indexed for MEDLINE]
-  **287:** [Ikeda T, Utsuyama M, Hirokawa K.](#) [Related Articles, Links](#)
-  Expression profiles of receptor activator of nuclear factor kappaB ligand, receptor activator of nuclear factor kappaB, and osteoprotegerin messenger RNA in aged and ovariectomized rat bones.
J Bone Miner Res. 2001 Aug;16(8):1416-25.
PMID: 11499864 [PubMed - indexed for MEDLINE]
-  **288:** [Sakai A, Nishida S, Nishida S, Tsutsui T, Takeuchi K, Takeda S, Nakamura T.](#) [Related Articles, Links](#)
-  1alpha-Hydroxyvitamin D3 suppresses trabecular bone resorption by inhibiting osteoclastogenic potential in bone marrow cells after ovariectomy in mice.
J Bone Miner Metab. 2001;19(5):277-86.
PMID: 11498729 [PubMed - indexed for MEDLINE]
-  **289:** [Hofbauer LC, Heufelder AE.](#) [Related Articles, Links](#)
-  Role of receptor activator of nuclear factor-kappaB ligand and osteoprotegerin in bone cell biology.
J Mol Med. 2001 Jun;79(5-6):243-53. Review.
PMID: 11485016 [PubMed - indexed for MEDLINE]
-  **290:** [Thomas GP, Baker SU, Eisman JA, Gardiner EM.](#) [Related Articles, Links](#)
-  Changing RANKL/OPG mRNA expression in differentiating murine primary osteoblasts.
J Endocrinol. 2001 Aug;170(2):451-60.
PMID: 11479141 [PubMed - indexed for MEDLINE]
-  **291:** [Yamagishi T, Otsuka E, Hagiwara H.](#) [Related Articles, Links](#)
-  Reciprocal control of expression of mRNAs for osteoclast differentiation factor and OPG in osteogenic stromal cells by genistein: evidence for the involvement of topoisomerase II in osteoclastogenesis.
Endocrinology. 2001 Aug;142(8):3632-7.
PMID: 11459812 [PubMed - indexed for MEDLINE]
-  **292:** [Seck T, Diel I, Bismar H, Ziegler R, Pfeilschifter J.](#) [Related Articles, Links](#)
-  Serum parathyroid hormone, but not menopausal status, is associated with the expression of osteoprotegerin and RANKL mRNA in human bone

samples.

Eur J Endocrinol. 2001 Aug;145(2):199-205.

PMID: 11454517 [PubMed - indexed for MEDLINE]


-  **293:** [Choi Y, Woo KM, Ko SH, Lee YJ, Park SJ, Kim HM, Kwon BS.](#) [Related Articles, Links](#)



Osteoclastogenesis is enhanced by activated B cells but suppressed by activated CD8(+) T cells.

Eur J Immunol. 2001 Jul;31(7):2179-88.

PMID: 11449372 [PubMed - indexed for MEDLINE]


-  **294:** [Sakiyama H, Masuda R, Inoue N, Yamamoto K, Kuriwa K, Nakagawa K, Yoshida K.](#) [Related Articles, Links](#)



Establishment and characterization of macrophage-like cell lines expressing osteoclast-specific markers.

J Bone Miner Metab. 2001;19(4):220-7.

PMID: 11448014 [PubMed - indexed for MEDLINE]

-  **295:** [Corisdeo S, Gyda M, Zaidi M, Moonga BS, Troen BR.](#) [Related Articles, Links](#)



New insights into the regulation of cathepsin K gene expression by osteoprotegerin ligand.

Biochem Biophys Res Commun. 2001 Jul 13;285(2):335-9.

PMID: 11444847 [PubMed - indexed for MEDLINE]


-  **296:** [Gyda M, Corisdeo S, Zaidi M, Troen BR.](#) [Related Articles, Links](#)



Macrophage colony-stimulating factor suppresses osteoblast formation.

Biochem Biophys Res Commun. 2001 Jul 13;285(2):328-34.

PMID: 11444846 [PubMed - indexed for MEDLINE]


-  **297:** [Kukita T, Kukita A, Watanabe T, Iijima T.](#) [Related Articles, Links](#)



Osteoclast differentiation antigen, distinct from receptor activator of nuclear factor kappa B, is involved in osteoclastogenesis under calcitonin-regulated conditions.

J Endocrinol. 2001 Jul;170(1):175-83.

PMID: 11431150 [PubMed - indexed for MEDLINE]


-  **298:** [Haynes DR, Crotti TN, Lorie M, Bain GL, Atkins GJ, Findlay DM.](#) [Related Articles, Links](#)



Osteoprotegerin and receptor activator of nuclear factor kappaB ligand (RANKL) regulate osteoclast formation by cells in the human rheumatoid arthritic joint.

Rheumatology (Oxford). 2001 Jun;40(6):623-30.

PMID: 11426018 [PubMed - indexed for MEDLINE]


-  **299:** [Fazzalari NL, Kuliwaba JS, Atkins GJ, Forwood MR, Findlay DM.](#) [Related Articles, Links](#)



The ratio of messenger RNA levels of receptor activator of nuclear factor kappaB ligand to osteoprotegerin correlates with bone remodeling indices in normal human cancellous bone but not in osteoarthritis.

J Bone Miner Res. 2001 Jun;16(6):1015-27.

PMID: 11393778 [PubMed - indexed for MEDLINE]


-  **300:** [Kon T, Cho TJ, Aizawa T, Yamazaki M, Nooh N, Graves D, Gerstenfeld LC, Einhorn TA.](#) [Related Articles, Links](#)



Expression of osteoprotegerin, receptor activator of NF-kappaB ligand (osteoprotegerin ligand) and related proinflammatory cytokines during fracture healing.

J Bone Miner Res. 2001 Jun;16(6):1004-14.

PMID: 11393777 [PubMed - indexed for MEDLINE]

 **301:** [Abu-Amer Y.](#)


[Related Articles](#), [Links](#)



IL-4 abrogates osteoclastogenesis through STAT6-dependent inhibition of NF-kappaB.

J Clin Invest. 2001 Jun;107(11):1375-85.

PMID: 11390419 [PubMed - indexed for MEDLINE]

 **302:** [Hein GE.](#)


[Related Articles](#), [Links](#)



[Pathophysiology of bone loss in rheumatic diseases--do bone markers help in monitoring?]

Z Rheumatol. 2001 Apr;60(2):113-5. German. No abstract available.

PMID: 11383046 [PubMed - indexed for MEDLINE]

 **303:** [Kanzaki H, Chiba M, Shimizu Y, Mitani H.](#)


[Related Articles](#), [Links](#)



Dual regulation of osteoclast differentiation by periodontal ligament cells through RANKL stimulation and OPG inhibition.

J Dent Res. 2001 Mar;80(3):887-91.

PMID: 11379890 [PubMed - indexed for MEDLINE]

 **304:** [Kostenuik PJ, Shalhoub V.](#)


[Related Articles](#), [Links](#)



Osteoprotegerin: a physiological and pharmacological inhibitor of bone resorption.

Curr Pharm Des. 2001 May;7(8):613-35. Review.

PMID: 11375772 [PubMed - indexed for MEDLINE]

 **305:** [Zhang J, Dai J, Qi Y, Lin DL, Smith P, Strayhorn C, Mizokami A, Fu Z, Westman J, Keller ET.](#)

[Related Articles](#), [Links](#)



Osteoprotegerin inhibits prostate cancer-induced osteoclastogenesis and prevents prostate tumor growth in the bone.

J Clin Invest. 2001 May;107(10):1235-44.

PMID: 11375413 [PubMed - indexed for MEDLINE]

 **306:** [Goltzman D.](#)


[Related Articles](#), [Links](#)



Osteolysis and cancer.

J Clin Invest. 2001 May;107(10):1219-20. No abstract available.

PMID: 11375409 [PubMed - indexed for MEDLINE]

 **307:** [Green MJ, Deodhar AA.](#)


[Related Articles](#), [Links](#)



Bone changes in early rheumatoid arthritis.

Best Pract Res Clin Rheumatol. 2001 Mar;15(1):105-23. Review.

PMID: 11358418 [PubMed - indexed for MEDLINE]

 **308:** [Kotake S, Udagawa N, Hakoda M, Mogi M, Yano K, Tsuda E, Takahashi K, Furuya T, Ishiyama S, Kim KJ, Saito S, Nishikawa T, Takahashi N, Togari A, Tomatsu T, Suda T, Kamatani N.](#)


[Related Articles](#), [Links](#)



Activated human T cells directly induce osteoclastogenesis from human monocytes: possible role of T cells in bone destruction in rheumatoid arthritis patients.

Arthritis Rheum. 2001 May;44(5):1003-12.

PMID: 11352231 [PubMed - indexed for MEDLINE]

 **309:** [Disthabanchong S, Gonzalez EA.](#)


[Related Articles](#), [Links](#)



Regulation of bone cell development and function: implication for renal osteodystrophy.




















J Invest Med. 2001 May;49(3):240-9. Review. No abstract available.

PMID: 11352181 [PubMed - indexed for MEDLINE]


 **310:** [Taubman MA, Kawai T.](#)

[Related Articles](#), [Links](#)

Involvement of T-lymphocytes in periodontal disease and in direct and

-  indirect induction of bone resorption.
Crit Rev Oral Biol Med. 2001;12(2):125-35. Review.
PMID: 11345523 [PubMed - indexed for MEDLINE]
-  **311:** [Komine M, Kukita A, Kukita T, Ogata Y, Hotokebuchi T, Kohashi O.](#) [Related Articles, Links](#)
-  Tumor necrosis factor-alpha cooperates with receptor activator of nuclear factor kappaB ligand in generation of osteoclasts in stromal cell-depleted rat bone marrow cell culture.
Bone. 2001 May;28(5):474-83.
PMID: 11344046 [PubMed - indexed for MEDLINE]
-  **312:** [Van Bezooijen RL, Papapoulos SE, Lowik CW.](#) [Related Articles, Links](#)
-  Effect of interleukin-17 on nitric oxide production and osteoclastic bone resorption: is there dependency on nuclear factor-kappaB and receptor activator of nuclear factor kappaB (RANK)/RANK ligand signaling?
Bone. 2001 Apr;28(4):378-86.
PMID: 11336918 [PubMed - indexed for MEDLINE]
-  **313:** [Atkins GJ, Bouralexis S, Haynes DR, Graves SE, Geary SM, Evdokiou A, Zannettino AC, Hay S, Findlay DM.](#) [Related Articles, Links](#)
-  Osteoprotegerin inhibits osteoclast formation and bone resorbing activity in giant cell tumors of bone.
Bone. 2001 Apr;28(4):370-7.
PMID: 11336917 [PubMed - indexed for MEDLINE]
-  **314:** [Hofbauer LC, Heufelder AE, Erben RG.](#) [Related Articles, Links](#)
-  Osteoprotegerin, RANK, and RANK ligand: the good, the bad, and the ugly in rheumatoid arthritis.
J Rheumatol. 2001 Apr;28(4):685-7. Review. No abstract available.
PMID: 11327234 [PubMed - indexed for MEDLINE]
-  **315:** [Horowitz MC, Xi Y, Wilson K, Kacena MA.](#) [Related Articles, Links](#)
-  Control of osteoclastogenesis and bone resorption by members of the TNF family of receptors and ligands.
Cytokine Growth Factor Rev. 2001 Mar;12(1):9-18. Review.
PMID: 11312114 [PubMed - indexed for MEDLINE]
-  **316:** [Brown JM, Corey E, Lee ZD, True LD, Yun TJ, Tondravi M, Vessella RL.](#) [Related Articles, Links](#)
-  Osteoprotegerin and rank ligand expression in prostate cancer.
Urology. 2001 Apr;57(4):611-6.
PMID: 11306358 [PubMed - indexed for MEDLINE]
-  **317:** [Mackie PS, Fisher JL, Zhou H, Choong PF.](#) [Related Articles, Links](#)
-  Bisphosphonates regulate cell growth and gene expression in the UMR 106-01 clonal rat osteosarcoma cell line.
Br J Cancer. 2001 Apr 6;84(7):951-8.
PMID: 11286476 [PubMed - indexed for MEDLINE]
-  **318:** [Lories RJ, Luyten FP.](#) [Related Articles, Links](#)
-  Osteoprotegerin and osteoprotegerin-ligand balance: a new paradigm in bone metabolism providing new therapeutic targets.
Clin Rheumatol. 2001;20(1):3-9. Review.
PMID: 11254237 [PubMed - indexed for MEDLINE]
-  **319:** [Ikeda T, Kasai M, Utsuyama M, Hirokawa K.](#) [Related Articles, Links](#)
-  Determination of three isoforms of the receptor activator of nuclear


factor-kappaB ligand and their differential expression in bone and thymus.
Endocrinology. 2001 Apr;142(4):1419-26.
PMID: 11250921 [PubMed - indexed for MEDLINE]

 **320:** [Michigami T, Ihara-Watanabe M, Yamazaki M, Ozono K.](#) [Related Articles, Links](#)



Receptor activator of nuclear factor kappaB ligand (RANKL) is a key molecule of osteoclast formation for bone metastasis in a newly developed model of human neuroblastoma.

Cancer Res. 2001 Feb 15;61(4):1637-44.
PMID: 11245477 [PubMed - indexed for MEDLINE]

 **321:** [Mori K, Miyamoto N, Higuchi Y, Nanba K, Ito M, Tsurudome M, Nishio M, Kawano M, Uchida A, Ito Y.](#) [Related Articles, Links](#)



Cross-talk between RANKL and FRP-1/CD98 Systems: RANKL-mediated osteoclastogenesis is suppressed by an inhibitory anti-CD98 heavy chain mAb and CD98-mediated osteoclastogenesis is suppressed by osteoclastogenesis inhibitory factor.


Cell Immunol. 2001 Feb 1;207(2):118-26.
PMID: 11243701 [PubMed - indexed for MEDLINE]

 **322:** [Takeuchi T, Tsuboi T, Arai M, Togari A.](#) [Related Articles, Links](#)



Adrenergic stimulation of osteoclastogenesis mediated by expression of osteoclast differentiation factor in MC3T3-E1 osteoblast-like cells.

Biochem Pharmacol. 2001 Mar 1;61(5):579-86.
PMID: 11239501 [PubMed - indexed for MEDLINE]

 **323:** [Sasaki N, Kusano E, Ando Y, Yano K, Tsuda E, Asano Y.](#) [Related Articles, Links](#)



Glucocorticoid decreases circulating osteoprotegerin (OPG): possible mechanism for glucocorticoid induced osteoporosis.


Nephrol Dial Transplant. 2001 Mar;16(3):479-82.
PMID: 11239019 [PubMed - indexed for MEDLINE]

 **324:** [Hofbauer LC, Heufelder AE.](#) [Related Articles, Links](#)



[Osteoprotegerin ligand and osteoprotegerin: new concepts of the pathogenesis and therapy of metabolic bone diseases]


Dtsch Med Wochenschr. 2001 Feb 9;126(6):145-50. Review. German. No abstract available.
PMID: 11233883 [PubMed - indexed for MEDLINE]

 **325:** [Kotake S, Utagawa N, Suda T, Kamatani N.](#) [Related Articles, Links](#)



[Molecular mechanism of bone metabolism]


Nippon Naika Gakkai Zasshi. 2000 Oct 10;89(10):2046-53. Review. Japanese. No abstract available.
PMID: 11215116 [PubMed - indexed for MEDLINE]

 **326:** [Weitzmann MN, Cenci S, Rifas L, Haug J, Dipersio J, Pacifici R.](#) [Related Articles, Links](#)



T cell activation induces human osteoclast formation via receptor activator of nuclear factor kappaB ligand-dependent and -independent mechanisms.


J Bone Miner Res. 2001 Feb;16(2):328-37.
PMID: 11204433 [PubMed - indexed for MEDLINE]


















 **327:** [Wise GE, Lumpkin SJ, Huang H, Zhang Q.](#) [Related Articles, Links](#)




Osteoprotegerin and osteoclast differentiation factor in tooth eruption.

J Dent Res. 2000 Dec;79(12):1937-42.
PMID: 11201042 [PubMed - indexed for MEDLINE]

 **328:** [Aubin JE, Bonnelve E.](#) [Related Articles, Links](#)

-  **Osteoprotegerin and its ligand: a new paradigm for regulation of osteoclastogenesis and bone resorption.**
Osteoporos Int. 2000;11(11):905-13. Review.
PMID: 11193242 [PubMed - indexed for MEDLINE]
-  **329:** Clohisy DR, Ramnaraine ML, Scully S, Qi M, Van G, Tan HL, Lacey DL. [Related Articles, Links](#)
-  **Osteoprotegerin inhibits tumor-induced osteoclastogenesis and bone tumor growth in osteopetrotic mice.**
J Orthop Res. 2000 Nov;18(6):967-76.
PMID: 11192258 [PubMed - indexed for MEDLINE]
-  **330:** Benard J. [Related Articles, Links](#)
-  **[From metastatic osteolysis a painful message: beginning to understand with osteoprotegerin?**
Bull Cancer. 2000 Sep;87(9):623-4. French. No abstract available.
PMID: 11184451 [PubMed - indexed for MEDLINE]
-  **331:** Kikuchi T, Matsuguchi T, Tsuboi N, Mitani A, Tanaka S, Matsuoka M, Yamamoto G, Hishikawa T, Noguchi T, Yoshikai Y. [Related Articles, Links](#)
-  **Gene expression of osteoclast differentiation factor is induced by lipopolysaccharide in mouse osteoblasts via Toll-like receptors.**
J Immunol. 2001 Mar 1;166(5):3574-9.
PMID: 11207318 [PubMed - indexed for MEDLINE]
-  **332:** O'Brien EA, Williams JH, Marshall MJ. [Related Articles, Links](#)
-  **Osteoprotegerin is produced when prostaglandin synthesis is inhibited causing osteoclasts to detach from the surface of mouse parietal bone and attach to the endocranial membrane.**
Bone. 2001 Feb;28(2):208-14.
PMID: 11182380 [PubMed - indexed for MEDLINE]
-  **333:** Gravallese EM, Galson DL, Goldring SR, Auron PE. [Related Articles, Links](#)
-  **The role of TNF-receptor family members and other TRAF-dependent receptors in bone resorption.**
Arthritis Res. 2001;3(1):6-12. Epub 2000 Nov 02. Review.
PMID: 11178122 [PubMed - indexed for MEDLINE]
-  **334:** Wuyts W, Van Wesenbeeck L, Morales-Piga A, Ralston S, Hocking L, Vanhoenacker F, Westhovens R, Verbruggen L, Anderson D, Hughes A, Van Hul W. [Related Articles, Links](#)
-  **Evaluation of the role of RANK and OPG genes in Paget's disease of bone.**
Bone. 2001 Jan;28(1):104-7.
PMID: 11165949 [PubMed - indexed for MEDLINE]
-  **335:** Hemmi H, Okuyama H, Yamane T, Nishikawa S, Nakano T, Yamazaki H, Kunisada T, Hayashi S. [Related Articles, Links](#)
-  **Temporal and spatial localization of osteoclasts in colonies from embryonic stem cells.**
Biochem Biophys Res Commun. 2001 Jan 19;280(2):526-34.
PMID: 11162550 [PubMed - indexed for MEDLINE]
-  **336:** Hofbauer LC, Shui C, Riggs BL, Dunstan CR, Spelsberg TC, O'Brien T, Khosla S. [Related Articles, Links](#)
-  **Effects of immunosuppressants on receptor activator of NF-kappaB ligand and osteoprotegerin production by human osteoblastic and coronary artery smooth muscle cells.**


Biochem Biophys Res Commun. 2001 Jan 12;280(1):334-9.
PMID: 11162519 [PubMed - indexed for MEDLINE]

-  **337:** [American Society for Bone and Mineral Research President's Committee on Nomenclature.](#) [Related Articles, Links](#)



Proposed standard nomenclature for new tumor necrosis factor family members involved in the regulation of bone resorption. The American Society for Bone and Mineral Research President's Committee on Nomenclature.

J Bone Miner Res. 2000 Dec;15(12):2293-6.
PMID: 11127193 [PubMed - indexed for MEDLINE]

-  **338:** [Shalhoub V, Elliott G, Chiu L, Manoukian R, Kelley M, Hawkins N, Davy E, Shimamoto G, Beck J, Kaufman SA, Van G, Scully S, Qi M, Grisanti M, Dunstan C, Boyle WJ, Lacey DL.](#) [Related Articles, Links](#)



Characterization of osteoclast precursors in human blood.

Br J Haematol. 2000 Nov;111(2):501-12.
PMID: 11122091 [PubMed - indexed for MEDLINE]

-  **339:** [Kong YY, Penninger JM.](#) [Related Articles, Links](#)



Molecular control of bone remodeling and osteoporosis.


Exp Gerontol. 2000 Oct;35(8):947-56. Review.
PMID: 11121682 [PubMed - indexed for MEDLINE]

-  **340:** [Fan X, Fan D, Gewant H, Royce CL, Nanes MS, Rubin J.](#) [Related Articles, Links](#)



Increasing membrane-bound MCSF does not enhance OPGL-driven osteoclastogenesis from marrow cells.


Am J Physiol Endocrinol Metab. 2001 Jan;280(1):E103-11.
PMID: 11120664 [PubMed - indexed for MEDLINE]

-  **341:** [Mancini L, Moradi-Bidhendi N, Brandi ML, Perretti M, Macintyre J.](#) [Related Articles, Links](#)



Modulation of the effects of osteoprotegerin (OPG) ligand in a human leukemic cell line by OPG and calcitonin.

Biochem Biophys Res Commun. 2000 Dec 20;279(2):391-7.
PMID: 11118297 [PubMed - indexed for MEDLINE]

-  **342:** [Takayanagi H, Ogasawara K, Hida S, Chiba T, Murata S, Sato K, Takaoka A, Yokochi T, Oda H, Tanaka K, Nakamura K, Taniguchi T.](#) [Related Articles, Links](#)



T-cell-mediated regulation of osteoclastogenesis by signalling cross-talk between RANKL and IFN-gamma.


Nature. 2000 Nov 30;408(6812):600-5.
PMID: 11117749 [PubMed - indexed for MEDLINE]

-  **343:** [\[No authors listed\]](#) [Related Articles, Links](#)



Proposed standard nomenclature for new tumor necrosis factor members involved in the regulation of bone resorption. The American Society for Bone and Mineral Research President's Committee on Nomenclature.



















Bone. 2000 Dec;27(6):761-4. Review.
PMID: 11113385 [PubMed - indexed for MEDLINE]

-  **344:** [Miyamoto T, Arai F, Ohneda O, Takagi K, Anderson DM, Suda T.](#) [Related Articles, Links](#)




An adherent condition is required for formation of multinuclear osteoclasts in the presence of macrophage colony-stimulating factor and receptor activator of nuclear factor kappa B ligand.

Blood. 2000 Dec 15;96(13):4335-43.
PMID: 11110710 [PubMed - indexed for MEDLINE]

-  **345:** [Gori F, Hofbauer LC, Dunstan CR, Spelsberg TC, Khosla S, Riggs BL.](#) [Related Articles](#), [Links](#)
-  **The expression of osteoprotegerin and RANK ligand and the support of osteoclast formation by stromal-osteoblast lineage cells is developmentally regulated.**
Endocrinology. 2000 Dec;141(12):4768-76.
PMID: 11108292 [PubMed - indexed for MEDLINE]
-  **346:** [Takami M, Takahashi N, Udagawa N, Miyaura C, Suda K, Woo JT, Martin TJ, Nagai K, Suda T.](#) [Related Articles](#), [Links](#)
-  **Intracellular calcium and protein kinase C mediate expression of receptor activator of nuclear factor-kappaB ligand and osteoprotegerin in osteoblasts.**
Endocrinology. 2000 Dec;141(12):4711-9.
PMID: 11108286 [PubMed - indexed for MEDLINE]
-  **347:** [Lee ZH, Kwack K, Kim KK, Lee SH, Kim HH.](#) [Related Articles](#), [Links](#)
-  **Activation of c-Jun N-terminal kinase and activator protein 1 by receptor activator of nuclear factor kappaB.**
Mol Pharmacol. 2000 Dec;58(6):1536-45.
PMID: 11093794 [PubMed - indexed for MEDLINE]
-  **348:** [Xu J, Tan JW, Huang L, Gao XH, Laird R, Liu D, Wysocki S, Zheng MH.](#) [Related Articles](#), [Links](#)
-  **Cloning, sequencing, and functional characterization of the rat homologue of receptor activator of NF-kappaB ligand.**
J Bone Miner Res. 2000 Nov;15(11):2178-86.
PMID: 11092398 [PubMed - indexed for MEDLINE]
-  **349:** [Riggs BL.](#) [Related Articles](#), [Links](#)
-  **The mechanisms of estrogen regulation of bone resorption.**
J Clin Invest. 2000 Nov;106(10):1203-4. Review. No abstract available.
PMID: 11086020 [PubMed - indexed for MEDLINE]
-  **350:** [Sakuma Y, Tanaka K, Suda M, Komatsu Y, Yasoda A, Miura M, Ozasa A, Narumiya S, Sugimoto Y, Ichikawa A, Ushikubi F, Nakao K.](#) [Related Articles](#), [Links](#)
-  **Impaired bone resorption by lipopolysaccharide in vivo in mice deficient in the prostaglandin E receptor EP4 subtype.**
Infect Immun. 2000 Dec;68(12):6819-25.
PMID: 11083800 [PubMed - indexed for MEDLINE]
-  **351:** [Kong YY, Boyle WJ, Penninger JM.](#) [Related Articles](#), [Links](#)
-  **Osteoprotegerin ligand: a regulator of immune responses and bone physiology.**
Immunol Today. 2000 Oct;21(10):495-502. Review. No abstract available.
PMID: 11071528 [PubMed - indexed for MEDLINE]
-  **352:** [Kinpara K, Mogi M, Kuzushima M, Togari A.](#) [Related Articles](#), [Links](#)
-  **Osteoclast differentiation factor in human osteosarcoma cell line.**
J Immunoassay. 2000 Nov;21(4):327-40.
PMID: 11071251 [PubMed - indexed for MEDLINE]
-  **353:** [Fata JE, Kong YY, Li J, Sasaki T, Irie-Sasaki J, Moorehead RA, Elliott R, Scully S, Vouras EB, Lacey DL, Boyle WJ, Khokha R, Penninger JM.](#) [Related Articles](#), [Links](#)
-  **The osteoclast differentiation factor osteoprotegerin-ligand is essential for mammary gland development.**
Cell. 2000 Sep 29;103(1):41-50.

PMID: 11051546 [PubMed - indexed for MEDLINE]


-  **354:** [Fox SW, Fuller K, Bayley KE, Lean JM, Chambers TJ.](#) [Related Articles, Links](#)



TGF-beta 1 and IFN-gamma direct macrophage activation by TNF-alpha to osteoclastic or cytotoxic phenotype.

J Immunol. 2000 Nov 1;165(9):4957-63.

PMID: 11046022 [PubMed - indexed for MEDLINE]


-  **355:** [Willard D, Chen WJ, Barrett G, Blackburn K, Bynum J, Consler T, Hoffman C, Horne E, Iannone MA, Kadwell S, Parham J, Ellis B.](#) [Related Articles, Links](#)



Expression, purification, and characterization of the human receptor activator of NF-kappaB ligand (RANKL) extracellular domain.

Protein Expr Purif. 2000 Oct;20(1):48-57.

PMID: 11035950 [PubMed - indexed for MEDLINE]


-  **356:** [Kaneda T, Nojima T, Nakagawa M, Ogasawara A, Kaneko H, Sato T, Mano H, Kumegawa M, Hakeda Y.](#) [Related Articles, Links](#)



Endogenous production of TGF-beta is essential for osteoclastogenesis induced by a combination of receptor activator of NF-kappa B ligand and macrophage-colony-stimulating factor.

J Immunol. 2000 Oct 15;165(8):4254-63.

PMID: 11035059 [PubMed - indexed for MEDLINE]


-  **357:** [Greevic D, Lee SK, Marusic A, Lorenzo JA.](#) [Related Articles, Links](#)



Depletion of CD4 and CD8 T lymphocytes in mice in vivo enhances 1,25-dihydroxyvitamin D3-stimulated osteoclast-like cell formation in vitro by a mechanism that is dependent on prostaglandin synthesis.

J Immunol. 2000 Oct 15;165(8):4231-8.

PMID: 11035056 [PubMed - indexed for MEDLINE]


-  **358:** [Zhang YH, Heulsmann A, Tondravi MM, Mukherjee A, Abu-Amer Y.](#) [Related Articles, Links](#)



Tumor necrosis factor-alpha (TNF) stimulates RANKL-induced osteoclastogenesis via coupling of TNF type 1 receptor and RANK signaling pathways.

J Biol Chem. 2001 Jan 5;276(1):563-8.

PMID: 11032840 [PubMed - indexed for MEDLINE]


-  **359:** [Kobayashi Y, Hashimoto F, Miyamoto H, Kanaoka K, Miyazaki-Kawashita Y, Nakashima T, Shibata M, Kobayashi K, Kato Y, Sakai H.](#) [Related Articles, Links](#)



Force-induced osteoclast apoptosis in vivo is accompanied by elevation in transforming growth factor beta and osteoprotegerin expression.

J Bone Miner Res. 2000 Oct;15(10):1924-34.

PMID: 11028444 [PubMed - indexed for MEDLINE]


-  **360:** [Takeyama S, Yoshimura Y, Shirai Y, Deyama Y, Hasegawa T, Yawaka Y, Kikuri T, Matsumoto A, Fukuda H.](#) [Related Articles, Links](#)



Low calcium environment effects osteoprotegerin ligand/osteoclast differentiation factor.

Biochem Biophys Res Commun. 2000 Sep 24;276(2):524-9.

PMID: 11027507 [PubMed - indexed for MEDLINE]


-  **361:** [Borset M, Hjertner O, Yaccoby S, Epstein J, Sanderson RD.](#) [Related Articles, Links](#)



Syndecan-1 is targeted to the uropods of polarized myeloma cells where it promotes adhesion and sequesters heparin-binding proteins.

Blood. 2000 Oct 1;96(7):2528-36.

PMID: 11001907 [PubMed - indexed for MEDLINE]

-  **362:** [Teng YT, Nguyen H, Gao X, Kong YY, Gorczynski RM, Singh B, Ellen RP, Penninger JM](#) [Related Articles, Links](#)



Functional human T-cell immunity and osteoprotegerin ligand control alveolar bone destruction in periodontal infection.
J Clin Invest. 2000 Sep;106(6):R59-67.
PMID: 10995794 [PubMed - indexed for MEDLINE]

-  **363:** [Lorenzo J](#) [Related Articles, Links](#)




Interactions between immune and bone cells: new insights with many remaining questions.
J Clin Invest. 2000 Sep;106(6):749-52. No abstract available.
PMID: 10995785 [PubMed - indexed for MEDLINE]

-  **364:** [Schinke T, Karsenty G](#) [Related Articles, Links](#)




Vascular calcification--a passive process in need of inhibitors.
Nephrol Dial Transplant. 2000 Sep;15(9):1272-4. Review. No abstract available.
PMID: 10978374 [PubMed - indexed for MEDLINE]

-  **365:** [Itoh K, Udagawa N, Matsuzaki K, Takami M, Amano H, Shinki T, Ueno Y, Takahashi N, Suda T](#) [Related Articles, Links](#)



Importance of membrane- or matrix-associated forms of M-CSF and RANKL/ODF in osteoclastogenesis supported by SaOS-4/3 cells expressing recombinant PTH/PTHrP receptors.
J Bone Miner Res. 2000 Sep;15(9):1766-75.
PMID: 10976996 [PubMed - indexed for MEDLINE]

-  **366:** [Nakashima T, Kobayashi Y, Yamasaki S, Kawakami A, Eguchi K, Sasaki H, Sakai H](#) [Related Articles, Links](#)



Protein expression and functional difference of membrane-bound and soluble receptor activator of NF-kappaB ligand: modulation of the expression by osteotropic factors and cytokines.
Biochem Biophys Res Commun. 2000 Sep 7;275(3):768-75.
PMID: 10973797 [PubMed - indexed for MEDLINE]

-  **367:** [Teitelbaum SL](#) [Related Articles, Links](#)




Bone resorption by osteoclasts.
Science. 2000 Sep 1;289(5484):1504-8. Review.
PMID: 10968780 [PubMed - indexed for MEDLINE]

-  **368:** [Yasuda H](#) [Related Articles, Links](#)




[A new paradigm of osteoclast biology: discovery of OCIF and ODF]
Seikagaku. 2000 Jul;72(7):507-25. Review. Japanese. No abstract available.
PMID: 10967683 [PubMed - indexed for MEDLINE]

-  **369:** [Udagawa N, Takahashi N, Yasuda H, Mizuno A, Itoh K, Ueno Y, Shinki T, Gillespie MT, Martin TJ, Higashio K, Suda T](#) [Related Articles, Links](#)




Osteoprotegerin produced by osteoblasts is an important regulator in osteoclast development and function.
Endocrinology. 2000 Sep;141(9):3478-84.
PMID: 10965921 [PubMed - indexed for MEDLINE]

-  **370:** [Neale SD, Smith R, Wass JA, Athanasou NA](#) [Related Articles, Links](#)



Osteoclast differentiation from circulating mononuclear precursors in Paget's disease is hypersensitive to 1,25-dihydroxyvitamin D(3) and RANKL.
Bone. 2000 Sep;27(3):409-16.
PMID: 10962353 [PubMed - indexed for MEDLINE]


-  **371:** [Weitzmann MN, Cenci S, Rifas L, Brown C, Pacifici R](#) [Related Articles, Links](#)



Interleukin-7 stimulates osteoclast formation by up-regulating the T-cell production of soluble osteoclastogenic cytokines.

Blood. 2000 Sep 1;96(5):1873-8.

PMID: 10961889 [PubMed - indexed for MEDLINE]


 **372:** [Shiba H, Nakanishi K, Sakata M, Fujita T, Uchida Y, Kurihara H.](#) [Related Articles, Links](#)



Effects of ageing on proliferative ability, and the expressions of secreted protein, acidic and rich in cysteine (SPARC) and osteoprotegerin (osteoclastogenesis inhibitory factor) in cultures of human periodontal ligament cells.

Mech Ageing Dev. 2000 Aug 15;117(1-3):69-77.

PMID: 10958924 [PubMed - indexed for MEDLINE]

 **373:** [Itonaga I, Fujikawa Y, Sabokbar A, Murray DW, Athanasou NA.](#) [Related Articles, Links](#)



Rheumatoid arthritis synovial macrophage-osteoclast differentiation is osteoprotegerin ligand-dependent.

J Pathol. 2000 Sep;192(1):97-104.

PMID: 10951406 [PubMed - indexed for MEDLINE]


 **374:** [Chambers TJ.](#) [Related Articles, Links](#)



Regulation of the differentiation and function of osteoclasts.

J Pathol. 2000 Sep;192(1):4-13. Review.

PMID: 10951393 [PubMed - indexed for MEDLINE]


 **375:** [Quinn JM, Horwood NJ, Elliott J, Gillespie MT, Martin TJ.](#) [Related Articles, Links](#)



Fibroblastic stromal cells express receptor activator of NF-kappa B ligand and support osteoclast differentiation.

J Bone Miner Res. 2000 Aug;15(8):1459-66.

PMID: 10934644 [PubMed - indexed for MEDLINE]


 **376:** [Lacey DL, Tan HL, Lu J, Kaufman S, Van G, Qiu W, Rattan A, Scully S, Fletcher F, Juan T, Kelley M, Burgess TL, Boyle WJ, Polverino AJ.](#) [Related Articles, Links](#)



Osteoprotegerin ligand modulates murine osteoclast survival in vitro and in vivo.

Am J Pathol. 2000 Aug;157(2):435-48.

PMID: 10934148 [PubMed - indexed for MEDLINE]


 **377:** [O'Brien EA, Williams JH, Marshall MJ.](#) [Related Articles, Links](#)



Osteoprotegerin ligand regulates osteoclast adherence to the bone surface in mouse calvaria.

Biochem Biophys Res Commun. 2000 Aug 2;274(2):281-90.

PMID: 10913332 [PubMed - indexed for MEDLINE]


 **378:** [Yamane T, Kunisada T, Yamazaki H, Nakano T, Orkin SH, Hayashi SL.](#) [Related Articles, Links](#)



Sequential requirements for SCL/tal-1, GATA-2, macrophage colony-stimulating factor, and osteoclast differentiation factor/osteoprotegerin ligand in osteoclast development.

Exp Hematol. 2000 Jul;28(7):833-40.

PMID: 10907645 [PubMed - indexed for MEDLINE]

 **379:** [Tsurukai T, Udagawa N, Matsuzaki K, Takahashi N, Suda T.](#) [Related Articles, Links](#)













Roles of macrophage-colony stimulating factor and osteoclast differentiation factor in osteoclastogenesis.

J Bone Miner Metab. 2000;18(4):177-84.

PMID: 10874596 [PubMed - indexed for MEDLINE]

[Lubberts E, Joosten LA, Chabaud M, van Den Bersselaar L.](#) [Related Articles, Links](#)

-  **380:** [Oppers B, Coenen-De Roo CJ, Richards CD, Miossec P, van Den Berg WB.](#) Related Articles, Links
IL-4 gene therapy for collagen arthritis suppresses synovial IL-17 and osteoprotegerin ligand and prevents bone erosion.
 J Clin Invest. 2000 Jun;105(12):1697-710.
 PMID: 10862785 [PubMed - indexed for MEDLINE]
-  **381:** [Rani CS, MacDougall M.](#) Related Articles, Links
Dental cells express factors that regulate bone resorption.
 Mol Cell Biol Res Commun. 2000 Mar;3(3):145-52.
 PMID: 10860862 [PubMed - indexed for MEDLINE]
-  **382:** [Gunther T, Schinke T.](#) Related Articles, Links
Mouse genetics have uncovered new paradigms in bone biology.
 Trends Endocrinol Metab. 2000 Jul;11(5):189-93. Review.
 PMID: 10856921 [PubMed - indexed for MEDLINE]
-  **383:** [Thirunavukkarasu K, Halladay DL, Miles RR, Yang X, Galvin RJ, Chandrasekhar S, Martin TJ, Onyia JE.](#) Related Articles, Links
The osteoblast-specific transcription factor Cbfa1 contributes to the expression of osteoprotegerin, a potent inhibitor of osteoclast differentiation and function.
 J Biol Chem. 2000 Aug 18;275(33):25163-72.
 PMID: 10833509 [PubMed - indexed for MEDLINE]
-  **384:** [Mbalaviele G, Abu-Amer Y, Meng A, Jaiswal R, Beck S, Pittenger MF, Thiede MA, Marshak DR.](#) Related Articles, Links
Activation of peroxisome proliferator-activated receptor-gamma pathway inhibits osteoclast differentiation.
 J Biol Chem. 2000 May 12;275(19):14388-93.
 PMID: 10799521 [PubMed - indexed for MEDLINE]
-  **385:** [Aubin JE, Bonnelye E.](#) Related Articles, Links
Osteoprotegerin and its ligand: A new paradigm for regulation of osteoclastogenesis and bone resorption.
 Medscape Womens Health. 2000 Mar;5(2):5. Review.
 PMID: 10792853 [PubMed - indexed for MEDLINE]
-  **386:** [Atkins GJ, Haynes DR, Graves SE, Eydokiou A, Hay S, Bouralexis S, Findlay DM.](#) Related Articles, Links
Expression of osteoclast differentiation signals by stromal elements of giant cell tumors.
 J Bone Miner Res. 2000 Apr;15(4):640-9.
 PMID: 10780856 [PubMed - indexed for MEDLINE]
-  **387:** [Mukohyama H, Ransjo M, Taniguchi H, Ohyama T, Lerner UH.](#) Related Articles, Links
The inhibitory effects of vasoactive intestinal peptide and pituitary adenylate cyclase-activating polypeptide on osteoclast formation are associated with upregulation of osteoprotegerin and downregulation of RANKL and RANK.
 Biochem Biophys Res Commun. 2000 Apr 29;271(1):158-63.
 PMID: 10777696 [PubMed - indexed for MEDLINE]
-  **388:** [Ross FP.](#) Related Articles, Links
RANKing the importance of measles virus in Paget's disease.
 J Clin Invest. 2000 Mar;105(5):555-8. No abstract available.
 PMID: 10712423 [PubMed - indexed for MEDLINE]
-  **389:** [Huang L, Xu J, Wood DJ, Zheng MH.](#) Related Articles, Links



Gene expression of osteoprotegerin ligand, osteoprotegerin, and receptor activator of NF-kappaB in giant cell tumor of bone: possible involvement in tumor cell-induced osteoclast-like cell formation.

Am J Pathol. 2000 Mar;156(3):761-7.

PMID: 10702390 [PubMed - indexed for MEDLINE]



390: [Li J, Sarosi I, Yan XQ, Morony S, Capparelli C, Tan HL, McCabe S, Elliott R, Scully S, Van G, Kaufman S, Juan SC, Sun Y, Tarpley J, Martin L, Christensen K, McCabe J, Kostenuik P, Hsu H, Fletcher F, Dunstan CR, Lacey DL, Boyle WJ.](#)

[Related Articles, Links](#)



RANK is the intrinsic hematopoietic cell surface receptor that controls osteoclastogenesis and regulation of bone mass and calcium metabolism.

Proc Natl Acad Sci U S A. 2000 Feb 15;97(4):1566-71.

PMID: 10677500 [PubMed - indexed for MEDLINE]



391: [Takayanagi H, Iizuka H, Juji T, Nakagawa T, Yamamoto A, Miyazaki T, Koshihara Y, Oda H, Nakamura K, Tanaka S.](#)

[Related Articles, Links](#)



Involvement of receptor activator of nuclear factor kappaB ligand/osteoclast differentiation factor in osteoclastogenesis from synoviocytes in rheumatoid arthritis.

Arthritis Rheum. 2000 Feb;43(2):259-69.

PMID: 10693864 [PubMed - indexed for MEDLINE]



392: [Gravallese EM, Manning C, Tsay A, Naito A, Pan C, Amento E, Goldring SR.](#)

[Related Articles, Links](#)



Synovial tissue in rheumatoid arthritis is a source of osteoclast differentiation factor.

Arthritis Rheum. 2000 Feb;43(2):250-8.

PMID: 10693863 [PubMed - indexed for MEDLINE]



393: [Tricot G.](#)

[Related Articles, Links](#)



New insights into role of microenvironment in multiple myeloma.

Lancet. 2000 Jan 22;355(9200):248-50. Review. No abstract available.

PMID: 10675068 [PubMed - indexed for MEDLINE]



394: [Thomas T, Lafage-Proust MH.](#)

[Related Articles, Links](#)



Contribution of genetically modified mouse models to the elucidation of bone physiology.

Rev Rhum Engl Ed. 1999 Dec;66(12):728-35. Review.

PMID: 10649609 [PubMed - indexed for MEDLINE]



395: [Hofbauer LC, Khosla S, Dunstan CR, Lacey DL, Boyle WJ, Riggs BL.](#)

[Related Articles, Links](#)



The roles of osteoprotegerin and osteoprotegerin ligand in the paracrine regulation of bone resorption.

J Bone Miner Res. 2000 Jan;15(1):2-12. Review.

PMID: 10646108 [PubMed - indexed for MEDLINE]



396: [Chikatsu N, Takeuchi Y, Tamura Y, Fukumoto S, Yano K, Tsuda E, Ogata E, Fujita T.](#)

[Related Articles, Links](#)



Interactions between cancer and bone marrow cells induce osteoclast differentiation factor expression and osteoclast-like cell formation in vitro.

Biochem Biophys Res Commun. 2000 Jan 19;267(2):632-7.

PMID: 10631114 [PubMed - indexed for MEDLINE]



397: [Itonaga I, Sabokbar A, Murray DW, Athanasou NA.](#)

















[Related Articles, Links](#)



Effect of osteoprotegerin and osteoprotegerin ligand on osteoclast formation by arthroplasty membrane derived macrophages.

Ann Rheum Dis. 2000 Jan;59(1):26-31.

PMID: 10627423 [PubMed - indexed for MEDLINE]

-  **398:** [Kong YY, Feige U, Sarosi I, Bolon B, Tafuri A, Morony S, Capparelli C, Li J, Elliott R, McCabe S, Wong T, Campagnuolo G, Moran E, Bogoch ER, Van G, Nguyen LT, Ohashi PS, Lacey DL, Fish E, Boyle WJ, Penninger JM.](#) [Related Articles, Links](#)
-  **Activated T cells regulate bone loss and joint destruction in adjuvant arthritis through osteoprotegerin ligand.**
Nature. 1999 Nov 18;402(6759):304-9.
PMID: 10580503 [PubMed - indexed for MEDLINE]
-  **399:** [Udagawa N, Takahashi N, Jimi E, Matsuzaki K, Tsurukai T, Itoh K, Nakagawa N, Yasuda H, Goto M, Tsuda E, Higashio K, Gillespie MT, Martin TJ, Suda T.](#) [Related Articles, Links](#)
-  **Osteoblasts/stromal cells stimulate osteoclast activation through expression of osteoclast differentiation factor/RANKL but not macrophage colony-stimulating factor: receptor activator of NF-kappa B ligand.**
Bone. 1999 Nov;25(5):517-23.
PMID: 10574571 [PubMed - indexed for MEDLINE]
-  **400:** [Nakagawa N, Yasuda H, Yano K, Mochizuki S, Kobayashi N, Fujimoto H, Shima N, Morinaga T, Chikazu D, Kawaguchi H, Higashio K.](#) [Related Articles, Links](#)
-  **Basic fibroblast growth factor induces osteoclast formation by reciprocally regulating the production of osteoclast differentiation factor and osteoclastogenesis inhibitory factor in mouse osteoblastic cells.**
Biochem Biophys Res Commun. 1999 Nov;265(1):158-63.
PMID: 10548507 [PubMed - indexed for MEDLINE]
-  **401:** [Nakagawa N, Yasuda H, Yano K, Mochizuki S, Kobayashi N, Fujimoto H, Yamaguchi K, Shima N, Morinaga T, Higashio K.](#) [Related Articles, Links](#)
-  **Basic fibroblast growth factor inhibits osteoclast formation induced by 1alpha,25-dihydroxyvitamin D(3) through suppressing the production of osteoclast differentiation factor.**
Biochem Biophys Res Commun. 1999 Nov;265(1):45-50.
PMID: 10548488 [PubMed - indexed for MEDLINE]
-  **402:** [Greenfield EM, Bi Y, Miyauchi A.](#) [Related Articles, Links](#)
-  **Regulation of osteoclast activity.**
Life Sci. 1999;65(11):1087-102. Review.
PMID: 10503925 [PubMed - indexed for MEDLINE]
-  **403:** [Thomas RJ, Guise TA, Yin JJ, Elliott J, Horwood NJ, Martin TJ, Gillespie MT.](#) [Related Articles, Links](#)
-  **Breast cancer cells interact with osteoblasts to support osteoclast formation.**
Endocrinology. 1999 Oct;140(10):4451-8.
PMID: 10499498 [PubMed - indexed for MEDLINE]
-  **404:** [Hofbauer LC, Gori F, Riggs BL, Lacey DL, Dunstan CR, Spelsberg TC, Khosla S.](#) [Related Articles, Links](#)
-  **Stimulation of osteoprotegerin ligand and inhibition of osteoprotegerin production by glucocorticoids in human osteoblastic lineage cells: potential paracrine mechanisms of glucocorticoid-induced osteoporosis.**
Endocrinology. 1999 Oct;140(10):4382-9.
PMID: 10499489 [PubMed - indexed for MEDLINE]
-  **405:** [Hofbauer LC, Lacey DL, Dunstan CR, Spelsberg TC, Riggs BL, Khosla S.](#) [Related Articles, Links](#)
-  **Interleukin-1beta and tumor necrosis factor-alpha, but not interleukin-6, stimulate osteoprotegerin ligand gene expression in human osteoblastic**

cells.

Bone. 1999 Sep;25(3):255-9.

PMID: 10495128 [PubMed - indexed for MEDLINE]

 **406:** [Hofbauer LC.](#)

[Related Articles](#), [Links](#)



Osteoprotegerin ligand and osteoprotegerin: novel implications for osteoclast biology and bone metabolism.

Eur J Endocrinol. 1999 Sep;141(3):195-210. Review. No abstract available.

PMID: 10474114 [PubMed - indexed for MEDLINE]

 **407:** [Lee SK, Lorenzo JA.](#)

[Related Articles](#), [Links](#)



Parathyroid hormone stimulates TRANCE and inhibits osteoprotegerin messenger ribonucleic acid expression in murine bone marrow cultures: correlation with osteoclast-like cell formation.

Endocrinology. 1999 Aug;140(8):3552-61.

PMID: 10433211 [PubMed - indexed for MEDLINE]

 **408:** [Roodman GD.](#)


[Related Articles](#), [Links](#)



Cell biology of the osteoclast.

Exp Hematol. 1999 Aug;27(8):1229-41. Review.

PMID: 10428500 [PubMed - indexed for MEDLINE]

 **409:** [Yasuda H, Shima N, Nakagawa N, Yamaguchi K, Kinoshita M, Goto M, Mochizuki SI, Tsuda E, Morinaga T, Udagawa N, Takahashi N, Suda T, Higashio K.](#)


[Related Articles](#), [Links](#)



A novel molecular mechanism modulating osteoclast differentiation and function.

Bone. 1999 Jul;25(1):109-13.

PMID: 10423033 [PubMed - indexed for MEDLINE]

 **410:** [Hayashi S, Yamane T, Miyamoto A, Hemmi H, Tagaya H, Tanio Y, Kanda H, Yamazaki H, Kunisada T.](#)


[Related Articles](#), [Links](#)



Commitment and differentiation of stem cells to the osteoclast lineage.

Biochem Cell Biol. 1998;76(6):911-22. Review.

PMID: 10392705 [PubMed - indexed for MEDLINE]

 **411:** [Jimi E, Akiyama S, Tsurukai T, Okahashi N, Kobayashi K, Udagawa N, Nishihara T, Takahashi N, Suda T.](#)

[Related Articles](#), [Links](#)



Osteoclast differentiation factor acts as a multifunctional regulator in murine osteoclast differentiation and function.

J Immunol. 1999 Jul 1;163(1):434-42.

PMID: 10384146 [PubMed - indexed for MEDLINE]

 **412:** [Wong BR, Josien R, Choi Y.](#)

[Related Articles](#), [Links](#)



TRANCE is a TNF family member that regulates dendritic cell and osteoclast function.

J Leukoc Biol. 1999 Jun;65(6):715-24. Review.

PMID: 10380891 [PubMed - indexed for MEDLINE]

 **413:** [Zhang XD, Franco A, Myers K, Gray C, Nguyen T, Hersey P.](#)

[Related Articles](#), [Links](#)



Relation of TNF-related apoptosis-inducing ligand (TRAIL) receptor and FLICE-inhibitory protein expression to TRAIL-induced apoptosis of melanoma.

Cancer Res. 1999 Jun 1;59(11):2747-53.

PMID: 10364001 [PubMed - indexed for MEDLINE]


 **414:** [Kong YY, Boyle WJ, Penninger JM.](#)

[Related Articles](#), [Links](#)



Osteoprotegerin ligand: a common link between osteoclastogenesis, lymph node formation and lymphocyte development.

Immunol Cell Biol. 1999 Apr;77(2):188-93. Review.
PMID: 10234557 [PubMed - indexed for MEDLINE]

-  **415:** [Burgess TL, Qian Y, Kaufman S, Ring BD, Van G, Capparelli C, Kelley M, Hsu H, Boyle WJ, Dunstan CR, Hu S, Lacey DL.](#) Related Articles, Links



The ligand for osteoprotegerin (OPGL) directly activates mature osteoclasts.


J Cell Biol. 1999 May 3;145(3):527-38.
PMID: 10225954 [PubMed - indexed for MEDLINE]

-  **416:** [Kitazawa R, Kitazawa S, Maeda S.](#) Related Articles, Links



Promoter structure of mouse RANKL/TRANCE/OPGL/ODF gene.

Biochim Biophys Acta. 1999 Apr 14;1445(1):134-41.
PMID: 10209265 [PubMed - indexed for MEDLINE]

-  **417:** [Akiyama H, Shigeno C, Iyama K, Ito H, Hiraki Y, Konishi J, Nakamura T.](#) Related Articles, Links



Indian hedgehog in the late-phase differentiation in mouse chondrogenic EC cells, ATDC5: upregulation of type X collagen and osteoprotegerin ligand mRNAs.


Biochem Biophys Res Commun. 1999 Apr 21;257(3):814-20.
PMID: 10208865 [PubMed - indexed for MEDLINE]

-  **418:** [Nagai M, Sato N.](#) Related Articles, Links



Reciprocal gene expression of osteoclastogenesis inhibitory factor and osteoclast differentiation factor regulates osteoclast formation.


Biochem Biophys Res Commun. 1999 Apr 21;257(3):719-23.
PMID: 10208850 [PubMed - indexed for MEDLINE]

-  **419:** [Kodaira K, Kodaira K, Mizuno A, Yasuda H, Shima N, Murakami A, Ueda M, Higashio K.](#) Related Articles, Links



Cloning and characterization of the gene encoding mouse osteoclast differentiation factor.

Gene. 1999 Apr 1;230(1):121-7.
PMID: 10196481 [PubMed - indexed for MEDLINE]

-  **420:** [Hsu H, Lacey DL, Dunstan CR, Solovyev I, Colombero A, Timms E, Tan HL, Elliott G, Kelley MJ, Sarosi I, Wang L, Xia XZ, Elliott R, Chiu L, Black T, Scully S, Capparelli C, Morony S, Shimamoto G, Bass MB, Boyle WJ.](#) Related Articles, Links



Tumor necrosis factor receptor family member RANK mediates osteoclast differentiation and activation induced by osteoprotegerin ligand.


Proc Natl Acad Sci U S A. 1999 Mar 30;96(7):3540-5.
PMID: 10097072 [PubMed - indexed for MEDLINE]

-  **421:** [Takahashi N, Udagawa N, Suda T.](#) Related Articles, Links



A new member of tumor necrosis factor ligand family, ODF/OPGL/TRANCE/RANKL, regulates osteoclast differentiation and function.


Biochem Biophys Res Commun. 1999 Mar 24;256(3):449-55. Review.
PMID: 10080918 [PubMed - indexed for MEDLINE]

-  **422:** [Faust J, Lacey DL, Hunt P, Burgess TL, Scully S, Van G, Eli A, Qian Y, Shalhoub V.](#) Related Articles, Links



Osteoclast markers accumulate on cells developing from human peripheral blood mononuclear precursors.

J Cell Biochem. 1999 Jan 1;72(1):67-80.
PMID: 10025668 [PubMed - indexed for MEDLINE]

-  **423:** [Shalhoub V, Faust J, Boyle WJ, Dunstan CR, Kelley M, Kaufman](#) Related Articles, Links

[S. Scully S. Van G. Lacey DL.](#)



Osteoprotegerin and osteoprotegerin ligand effects on osteoclast formation from human peripheral blood mononuclear cell precursors.

J Cell Biochem. 1999 Feb 1;72(2):251-61.

PMID: 10022507 [PubMed - indexed for MEDLINE]

- 424: [Kong YY, Yoshida H, Sarosi I, Tan HL, Timms E, Capparelli C, Morony S, Oliveira-dos-Santos AJ, Van G, Itie A, Khoo W, Wakeham A, Dunstan CR, Lacey DL, Mak TW, Boyle WJ, Penninger JM.](#) [Related Articles, Links](#)



OPGL is a key regulator of osteoclastogenesis, lymphocyte development and lymph-node organogenesis.

Nature. 1999 Jan 28;397(6717):315-23.

PMID: 9950424 [PubMed - indexed for MEDLINE]

- 425: [Schinke T, McKee MD, Kiviranta R, Karsenty G.](#) [Related Articles, Links](#)



Molecular determinants of arterial calcification.

Ann Med. 1998 Dec;30(6):538-41.

PMID: 9920355 [PubMed - indexed for MEDLINE]

- 426: [Nakagawa N, Kinosaki M, Yamaguchi K, Shima N, Yasuda H, Yano K, Morinaga T, Higashio K.](#) [Related Articles, Links](#)



RANK is the essential signaling receptor for osteoclast differentiation factor in osteoclastogenesis.

Biochem Biophys Res Commun. 1998 Dec 18;253(2):395-400.

PMID: 9878548 [PubMed - indexed for MEDLINE]

- 427: [Gao YH, Shinki T, Yuasa T, Kataoka-Enomoto H, Komori T, Suda T, Yamaguchi A.](#) [Related Articles, Links](#)



Potential role of cbfa1, an essential transcriptional factor for osteoblast differentiation, in osteoclastogenesis: regulation of mRNA expression of osteoclast differentiation factor (ODF).

Biochem Biophys Res Commun. 1998 Nov 27;252(3):697-702.

PMID: 9837769 [PubMed - indexed for MEDLINE]

- 428: [Horwood NJ, Elliott J, Martin TJ, Gillespie MT.](#) [Related Articles, Links](#)



Osteotropic agents regulate the expression of osteoclast differentiation factor and osteoprotegerin in osteoblastic stromal cells.

Endocrinology. 1998 Nov;139(11):4743-6.

PMID: 9794488 [PubMed - indexed for MEDLINE]

- 429: [Filvaroff E, Derynck R.](#) [Related Articles, Links](#)



Bone remodelling: a signalling system for osteoclast regulation.

Curr Biol. 1998 Sep 24;8(19):R679-82. Review.

PMID: 9768352 [PubMed - indexed for MEDLINE]

- 430: [Fuller K, Wong B, Fox S, Choi Y, Chambers TJ.](#) [Related Articles, Links](#)



TRANCE is necessary and sufficient for osteoblast-mediated activation of bone resorption in osteoclasts.

J Exp Med. 1998 Sep 7;188(5):997-1001.

PMID: 9730902 [PubMed - indexed for MEDLINE]

- 431: [Hofbauer LC, Heufelder AE.](#) [Related Articles, Links](#)



Osteoprotegerin and its cognate ligand: a new paradigm of osteoclastogenesis.

Eur J Endocrinol. 1998 Aug;139(2):152-4. Review. No abstract available.

PMID: 9724069 [PubMed - indexed for MEDLINE]

- 432: [Tsukii K, Shima N, Mochizuki S, Yamaguchi K, Kinosaki M.](#) [Related Articles, Links](#)

Yano K, Shibata O, Udagawa N, Yasuda H, Suda T, Higashio K.



Osteoclast differentiation factor mediates an essential signal for bone resorption induced by 1 alpha,25-dihydroxyvitamin D3, prostaglandin E2, or parathyroid hormone in the microenvironment of bone.

Biochem Biophys Res Commun. 1998 May 19;246(2):337-41.

PMID: 9610359 [PubMed - indexed for MEDLINE]

- ☐ **433:** Matsuzaki K, Udagawa N, Takahashi N, Yamaguchi K, Yasuda H, Shima N, Morinaga T, Toyama Y, Yabe Y, Higashio K, Suda T. [Related Articles, Links](#)



Osteoclast differentiation factor (ODF) induces osteoclast-like cell formation in human peripheral blood mononuclear cell cultures.

Biochem Biophys Res Commun. 1998 May 8;246(1):199-204.

PMID: 9600092 [PubMed - indexed for MEDLINE]

- ☐ **434:** Yasuda H, Shima N, Nakagawa N, Yamaguchi K, Kinoshita M, Mochizuki S, Tomoyasu A, Yano K, Goto M, Murakami A, Tsuda E, Morinaga T, Higashio K, Udagawa N, Takahashi N, Suda T. [Related Articles, Links](#)



Osteoclast differentiation factor is a ligand for osteoprotegerin/osteoclastogenesis-inhibitory factor and is identical to TRANCE/RANKL.

Proc Natl Acad Sci U S A. 1998 Mar 31;95(7):3597-602.

PMID: 9520411 [PubMed - indexed for MEDLINE]

- ☐ **435:** Lacey DL, Timms E, Tan HL, Kelley MJ, Dunstan CR, Burgess T, Elliott R, Colombero A, Elliott G, Scully S, Hsu H, Sullivan J, Hawkins N, Davy E, Capparelli C, Eli A, Qian YX, Kaufman S, Sarosi L, Shalhoub V, Senaldi G, Guo J, Delaney J, Boyle WJ. [Related Articles, Links](#)



Osteoprotegerin ligand is a cytokine that regulates osteoclast differentiation and activation.

Cell. 1998 Apr 17;93(2):165-76.

PMID: 9568710 [PubMed - indexed for MEDLINE]

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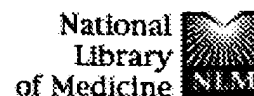
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☐ **1:** [Nakano K, Okada Y, Saito K, Tanaka Y.](#)

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Induction of RANKL expression and osteoclast maturation by the binding of fibroblast growth factor 2 to heparan sulfate proteoglycan on rheumatoid synovial fibroblasts.

Arthritis Rheum. 2004 Aug;50(8):2450-8.

PMID: 15334457 [PubMed - in process]

☐ **2:** [Colucci S, Brunetti G, Rizzi R, Zonno A, Mori G, Colaianni G, Del Prete D, Faccio R, Liso A, Capalbo S, Liso V, Zallone A, Grano M.](#)

[Related Articles, Links](#)



T cells support osteoclastogenesis in an in vitro model derived from human multiple myeloma bone disease: the role of the OPG/Trail interaction.

Blood. 2004 Aug 12 [Epub ahead of print]

PMID: 15308561 [PubMed - as supplied by publisher]

☐ **3:** [Sato T, Matsunaga T, Kida M, Morii K, Machida T, Kawano Y, Nakamura K, Kuribayashi K, Takada K, Iyama S, Sato Y, Takayama T, Takahashi M, Kato J, Chokki M, Niitsu Y.](#)

[Related Articles, Links](#)



Interleukin-11 as an osteoprotegerin-inducing factor in culture medium of blastic cells from a patient with acute megakaryocytic leukemia complicated with osteosclerosis.

Am J Hematol. 2004 Sep;77(1):62-6.

PMID: 15307108 [PubMed - in process]

☐ **4:** [Granchi D, Amato I, Battistelli L, Avnet S, Capaccioli S, Papucci L, Donnini M, Pellacani A, Brandi ML, Giunti A, Baldini N.](#)

[Related Articles, Links](#)



In vitro blockade of receptor activator of nuclear factor-kappaB ligand prevents osteoclastogenesis induced by neuroblastoma cells.

Int J Cancer. 2004 Oct 10;111(6):829-38.

PMID: 15300794 [PubMed - in process]

☐ **5:** [Hofbauer LC, Schoppet M.](#)

[Related Articles, Links](#)



Clinical implications of the osteoprotegerin/RANKL/RANK system for bone and vascular diseases.

JAMA. 2004 Jul 28;292(4):490-5. Review.

PMID: 15280347 [PubMed - indexed for MEDLINE]

☐ **6:** [Nociti FH Jr, Foster BL, Barros SP, Darveau RP, Somerman MJ.](#)

[Related Articles, Links](#)



Cementoblast gene expression is regulated by Porphyromonas gingivalis lipopolysaccharide partially via toll-like receptor-4/MD-2.

J Dent Res. 2004 Aug;83(8):602-7.

PMID: 15271967 [PubMed - in process]


☐ **7:** [Miyashita T, Kawakami A, Nakashima T, Yamasaki S, Tamai M, Tanaka F, Kamachi M, Ida H, Migita K, Origuchi T, Nakao K, Eguchi K.](#)


[Related Articles, Links](#)




Osteoprotegerin (OPG) acts as an endogenous decoy receptor in tumour necrosis factor-related apoptosis-inducing ligand (TRAIL)-mediated apoptosis of fibroblast-like synovial cells.


Clin Exp Immunol. 2004 Aug;137(2):430-6.
PMID: 15270863 [PubMed - in process]

-  **8:** [Lai FP, Cole-Sinclair M, Cheng WJ, Quinn JM, Gilliespie MT, Sentry JW, Schneider HG.](#) [Related Articles, Links](#)


 **Myeloma cells can directly contribute to the pool of RANKL in bone bypassing the classic stromal and osteoblast pathway of osteoclast stimulation.**


Br J Haematol. 2004 Jul;126(2):192-201.
PMID: 15238139 [PubMed - indexed for MEDLINE]

-  **9:** [Okada Y, Tsukada J, Nakano K, Tonai S, Mine S, Tanaka Y.](#) [Related Articles, Links](#)

 **Macrophage inflammatory protein-1alpha induces hypercalcemia in adult T-cell leukemia.**


J Bone Miner Res. 2004 Jul;19(7):1105-11.
PMID: 15176993 [PubMed - in process]

-  **10:** [Seshasayee D, Wang H, Lee WP, Gribling P, Ross J, Van Bruggen N, Carano R, Grewal IS.](#) [Related Articles, Links](#)

 **A novel in vivo role for osteoprotegerin ligand in activation of monocyte effector function and inflammatory response.**


J Biol Chem. 2004 Jul 16;279(29):30202-9. Epub 2004 May 15.
PMID: 15145935 [PubMed - indexed for MEDLINE]

-  **11:** [Pritzker LB, Scatena M, Giachelli CM.](#) [Related Articles, Links](#)


 **The role of osteoprotegerin and tumor necrosis factor-related apoptosis-inducing ligand in human microvascular endothelial cell survival.**


Mol Biol Cell. 2004 Jun;15(6):2834-41. Epub 2004 Apr 02.
PMID: 15064358 [PubMed - in process]

-  **12:** [Sohen S.](#) [Related Articles, Links](#)


 **[Glucocorticoid-induced osteoporosis in patients with rheumatoid arthritis and collagen diseases]**


Nippon Rinsho. 2004 Feb;62 Suppl 2:673-6. Review. Japanese. No abstract available.
PMID: 15035207 [PubMed - indexed for MEDLINE]

-  **13:** [Hayashi S, Tsuneto M, Yamada T, Nose M, Yoshino M, Shultz LD, Yamazaki H.](#) [Related Articles, Links](#)


 **Lipopolysaccharide-induced osteoclastogenesis in Src homology 2-domain phosphatase-1-deficient viable motheaten mice.**


Endocrinology. 2004 Jun;145(6):2721-9. Epub 2004 Feb 26.
PMID: 14988381 [PubMed - indexed for MEDLINE]

-  **14:** [Theoleyre S, Wittrant Y, Couillaud S, Vusio P, Berreur M, Dunstan C, Blanchard F, Redini F, Heymann D.](#) [Related Articles, Links](#)










 **Cellular activity and signaling induced by osteoprotegerin in osteoclasts: involvement of receptor activator of nuclear factor kappaB ligand and MAPK.**

Biochim Biophys Acta. 2004 Feb 2;1644(1):1-7.
PMID: 14741739 [PubMed - indexed for MEDLINE]


-  **15:** [Guillonnet C, Louvet C, Renaudin K, Heslan JM, Heslan M, Tesson L, Vignes C, Guillot C, Choi Y, Turka LA, Cuturi MC, Anejo J, Josien R.](#) [Related Articles, Links](#)

 **The role of TNF-related activation-induced cytokine-receptor activating NF-kappa B interaction in acute allograft rejection and CD40L-independent chronic allograft rejection.**

J Immunol. 2004 Feb 1;172(3):1619-29.
PMID: 14734743 [PubMed - indexed for MEDLINE]

-  **16:** [Zwerina J, Hayer S, Tohidast-Akrad M, Bergmeister H, Redlich K, Feige U, Dunstan C, Kollias G, Steiner G, Smolen J, Schett G.](#) Related Articles, Links
Single and combined inhibition of tumor necrosis factor, interleukin-1, and RANKL pathways in tumor necrosis factor-induced arthritis: effects on synovial inflammation, bone erosion, and cartilage destruction.
Arthritis Rheum. 2004 Jan;50(1):277-90.
PMID: 14730626 [PubMed - indexed for MEDLINE]
-  **17:** [Wittrant Y, Theoleyre S, Couillaud S, Dunstan C, Heymann D, Redini F.](#) Related Articles, Links
Relevance of an in vitro osteoclastogenesis system to study receptor activator of NF-kB ligand and osteoprotegerin biological activities.
Exp Cell Res. 2004 Feb 15;293(2):292-301.
PMID: 14729467 [PubMed - indexed for MEDLINE]
-  **18:** [Stolina M, Guo J, Faggioni R, Brown H, Senaldi G.](#) Related Articles, Links
Regulatory effects of osteoprotegerin on cellular and humoral immune responses.
Clin Immunol. 2003 Dec;109(3):347-54.
PMID: 14697750 [PubMed - indexed for MEDLINE]
-  **19:** [Liu JZ, Hu YY, Ji ZL, Chen SM.](#) Related Articles, Links
[Expression of human osteoprotegerin gene in E. Coli and bioactivity analysis of expression product]
Zhonghua Wai Ke Za Zhi. 2003 Sep;41(9):641-5. Chinese.
PMID: 14680558 [PubMed - indexed for MEDLINE]
-  **20:** [Crofti TN, Ahern MJ, Lange K, Weedon H, Coleman M, Roberts-Thomson PJ, Haynes DR, Smith MD.](#) Related Articles, Links
Variability of RANKL and osteoprotegerin staining in synovial tissue from patients with active rheumatoid arthritis: quantification using color video image analysis.
J Rheumatol. 2003 Nov;30(11):2319-24.
PMID: 14677171 [PubMed - indexed for MEDLINE]
-  **21:** [Okada T, Akikusa S, Okuno H, Kodaka M.](#) Related Articles, Links
Bone marrow metastatic myeloma cells promote osteoclastogenesis through RANKL on endothelial cells.
Clin Exp Metastasis. 2003;20(7):639-46.
PMID: 14669795 [PubMed - indexed for MEDLINE]
-  **22:** [Zhang J, Dai J, Yao Z, Lu Y, Dougall W, Keller ET.](#) Related Articles, Links
Soluble receptor activator of nuclear factor kappaB Fc diminishes prostate cancer progression in bone.
Cancer Res. 2003 Nov 15;63(22):7883-90.
PMID: 14633717 [PubMed - indexed for MEDLINE]
-  **23:** [Padigel UM, Kim N, Choi Y, Farrell JP.](#) Related Articles, Links
TRANCE-RANK costimulation is required for IL-12 production and the initiation of a Th1-type response to Leishmania major infection in CD40L-deficient mice.
J Immunol. 2003 Nov 15;171(10):5437-41.
PMID: 14607948 [PubMed - indexed for MEDLINE]
-  **24:** [Nagata N, Kitaura H, Yoshida N, Nakayama K.](#) Related Articles, Links
Inhibition of RANKL-induced osteoclast formation in mouse bone marrow cells by IL-12: involvement of IFN-gamma possibly induced from non-T cell population.


Bone. 2003 Oct;33(4):721-32.
PMID: 14555278 [PubMed - indexed for MEDLINE]

 **25:** [Seidl S, Kaufmann H, Drach J.](#)

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New insights into the pathophysiology of multiple myeloma.
Lancet Oncol. 2003 Sep;4(9):557-64. Review.
PMID: 12965277 [PubMed - indexed for MEDLINE]

 **26:** [Lee HA, Jeong H, Kim EY, Nam MY, Yoo YJ, Seo JT, Shin DM, Ohk SH, Lee SL.](#)

[Related Articles, Links](#)



Bumetanide, the specific inhibitor of Na⁺-K⁺-2Cl⁻ cotransport, inhibits 1alpha,25-dihydroxyvitamin D3-induced osteoclastogenesis in a mouse co-culture system.
Exp Physiol. 2003 Sep;88(5):569-74.
PMID: 12955156 [PubMed - indexed for MEDLINE]

 **27:** [Robinson D, Segal M, Nevo Z.](#)

[Related Articles, Links](#)




Giant cell tumor of bone. The role of fibroblast growth factor 3 positive mesenchymal stem cells in its pathogenesis.
Pathobiology. 2002-2003;70(6):333-42.
PMID: 12865629 [PubMed - indexed for MEDLINE]

 **28:** [Wong T, Majchrzak B, Bogoch E, Keystone EC, Fish EN.](#)

[Related Articles, Links](#)




Therapeutic implications for interferon-alpha in arthritis: a pilot study.
J Rheumatol. 2003 May;30(5):934-40.
PMID: 12734885 [PubMed - indexed for MEDLINE]

 **29:** [Dovio A, Sartori ML, Masera RG, Ceoloni B, Reimondo G, Prolo P, Racca S, Angeli A.](#)

[Related Articles, Links](#)




Autocrine down-regulation of glucocorticoid receptors by interleukin-11 in human osteoblast-like cell lines.
J Endocrinol. 2003 Apr;177(1):109-17.
PMID: 12697042 [PubMed - indexed for MEDLINE]

 **30:** [Locklin RM, Khosla S, Turner RT, Riggs BL.](#)

[Related Articles, Links](#)




Mediators of the biphasic responses of bone to intermittent and continuously administered parathyroid hormone.
J Cell Biochem. 2003 May 1;89(1):180-90.
PMID: 12682918 [PubMed - indexed for MEDLINE]

 **31:** [Okada Y, Montero A, Zhang X, Sobue T, Lorenzo J, Doetschman T, Coffin JD, Hurley MM.](#)

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
Impaired osteoclast formation in bone marrow cultures of Fgf2 null mice in response to parathyroid hormone.
J Biol Chem. 2003 Jun 6;278(23):21258-66. Epub 2003 Mar 28.
PMID: 12665515 [PubMed - indexed for MEDLINE]

 **32:** [Ra JS, Broxmeyer HE, Kim MW, Han IS, Choi SW, Kwon BS.](#)

[Related Articles, Links](#)




Osteoprotegerin inhibits proliferation of myeloid progenitor cells.
J Hematother Stem Cell Res. 2003 Feb;12(1):33-8.
PMID: 12662434 [PubMed - indexed for MEDLINE]

 **33:** [Han W, Zhang Y, Yan Z, Shi J.](#)



















[Related Articles, Links](#)




Construction of a new tumour necrosis factor fusion-protein expression vector for high-level expression of heterologous genes in Escherichia coli.
Biotechnol Appl Biochem. 2003 Apr;37(Pt 2):109-13.
PMID: 12630898 [PubMed - indexed for MEDLINE]


 **34:** [Shipman CM, Croucher PJ.](#)

[Related Articles, Links](#)

-  Osteoprotegerin is a soluble decoy receptor for tumor necrosis factor-related apoptosis-inducing ligand/Apo2 ligand and can function as a paracrine survival factor for human myeloma cells.
Cancer Res. 2003 Mar 1;63(5):912-6.
PMID: 12615702 [PubMed - indexed for MEDLINE]
-  **35:** Kudo O, Sabokbar A, Pocock A, Itonaga I, Fujikawa Y, Athanasou NA [Related Articles](#), [Links NA](#)
-  Interleukin-6 and interleukin-11 support human osteoclast formation by a RANKL-independent mechanism.
Bone. 2003 Jan;32(1):1-7.
PMID: 12584029 [PubMed - indexed for MEDLINE]
-  **36:** Oyajobi BO, Mundy GR [Related Articles](#), [Links](#)
-  Receptor activator of NF-kappaB ligand, macrophage inflammatory protein-1alpha, and the proteasome: novel therapeutic targets in myeloma.
Cancer. 2003 Feb 1;97(3 Suppl):813-7.
PMID: 12548580 [PubMed - indexed for MEDLINE]
-  **37:** Sordillo EM, Pearse RN [Related Articles](#), [Links](#)
-  RANK-Fc: a therapeutic antagonist for RANK-L in myeloma.
Cancer. 2003 Feb 1;97(3 Suppl):802-12. Review.
PMID: 12548579 [PubMed - indexed for MEDLINE]
-  **38:** Kato I, Sato H, Kudo A [Related Articles](#), [Links](#)
-  TRANCE together with IL-7 induces pre-B cells to proliferate.
Eur J Immunol. 2003 Feb;33(2):334-41.
PMID: 12548564 [PubMed - indexed for MEDLINE]
-  **39:** Holliday LS, Welgus HG, Hanna J, Lee BS, Lu M, Jeffrey JJ, Gluck SL [Related Articles](#), [Links](#)
-  Interstitial collagenase activity stimulates the formation of actin rings and ruffled membranes in mouse marrow osteoclasts.
Calcif Tissue Int. 2003 Mar;72(3):206-14. Epub 2003 Jan 15.
PMID: 12522662 [PubMed - indexed for MEDLINE]
-  **40:** Berenson JR [Related Articles](#), [Links](#)
-  Advances in the biology and treatment of myeloma bone disease.
Semin Oncol. 2002 Dec;29(6 Suppl 17):11-6. Review.
PMID: 12520479 [PubMed - indexed for MEDLINE]
-  **41:** Elhasid R, Hofbauer LC, Ish-Shalom S, Ben-Arush M, Koc O, Rowe JM, Etzioni A [Related Articles](#), [Links](#)
-  Familial severe congenital neutropenia associated with infantile osteoporosis: a new entity.
Am J Hematol. 2003 Jan;72(1):34-7.
PMID: 12508266 [PubMed - indexed for MEDLINE]
-  **42:** Sabokbar A, Kudo O, Athanasou NA [Related Articles](#), [Links](#)
-  Two distinct cellular mechanisms of osteoclast formation and bone resorption in periprosthetic osteolysis.
J Orthop Res. 2003 Jan;21(1):73-80.
PMID: 12507582 [PubMed - indexed for MEDLINE]
-  **43:** Hasegawa T, Yoshimura Y, Kikuri T, Yawaka Y, Takeyama S, Matsumoto A, Oguchi H, Shirakawa T [Related Articles](#), [Links](#)
- Expression of receptor activator of NF-kappa B ligand and osteoprotegerin in culture of human periodontal ligament cells.
J Periodontal Res. 2002 Dec;37(6):405-11.


PMID: 12472833 [PubMed - indexed for MEDLINE]


-  **44:** [Crotti TN, Smith MD, Weedon H, Ahern MJ, Findlay DM, Kraan M, Tak PP, Haynes DR.](#) [Related Articles, Links](#)

 **Receptor activator NF-kappaB ligand (RANKL) expression in synovial tissue from patients with rheumatoid arthritis, spondyloarthropathy, osteoarthritis, and from normal patients: semiquantitative and quantitative analysis.**

Ann Rheum Dis. 2002 Dec;61(12):1047-54.


PMID: 12429533 [PubMed - indexed for MEDLINE]


-  **45:** [Okada Y, Morimoto I, Ura K, Watanabe K, Eto S, Kumegawa M, Raisz L, Pilbeam C, Tanaka Y.](#) [Related Articles, Links](#)

 **Cell-to-Cell adhesion via intercellular adhesion molecule-1 and leukocyte function-associated antigen-1 pathway is involved in 1alpha,25(OH)2D3, PTH and IL-1alpha-induced osteoclast differentiation and bone resorption.**

Endocr J. 2002 Aug;49(4):483-95.


PMID: 12402981 [PubMed - indexed for MEDLINE]


-  **46:** [Atkins GJ, Bouralexis S, Evdokiou A, Hay S, Labrinidis A, Zannettino AC, Haynes DR, Findlay DM.](#) [Related Articles, Links](#)

 **Human osteoblasts are resistant to Apo2L/TRAIL-mediated apoptosis.**

Bone. 2002 Oct;31(4):448-56.


PMID: 12398939 [PubMed - indexed for MEDLINE]

-  **47:** [Giuliani N, Colla S, Sala R, Moroni M, Lazzaretti M, La Monica S, Bonomini S, Hojden M, Sammarelli G, Barille S, Bataille R, Rizzoli V.](#) [Related Articles, Links](#)

 **Human myeloma cells stimulate the receptor activator of nuclear factor-kappa B ligand (RANKL) in T lymphocytes: a potential role in multiple myeloma bone disease.**

Blood. 2002 Dec 15;100(13):4615-21. Epub 2002 Aug 08.

PMID: 12393684 [PubMed - indexed for MEDLINE]


-  **48:** [Kudo O, Fujikawa Y, Itonaga I, Sabokbar A, Torisu T, Athanasou NA.](#) [Related Articles, Links](#)

 **Proinflammatory cytokine (TNFalpha/IL-1alpha) induction of human osteoclast formation.**

J Pathol. 2002 Oct;198(2):220-7.

PMID: 12237882 [PubMed - indexed for MEDLINE]


-  **49:** [Palmqvist P, Persson E, Conaway HH, Lerner UH.](#) [Related Articles, Links](#)

 **IL-6, leukemia inhibitory factor, and oncostatin M stimulate bone resorption and regulate the expression of receptor activator of NF-kappa B ligand, osteoprotegerin, and receptor activator of NF-kappa B in mouse calvariae.**

J Immunol. 2002 Sep 15;169(6):3353-62.


PMID: 12218157 [PubMed - indexed for MEDLINE]


-  **50:** [Hortobagyi GN.](#) [Related Articles, Links](#)

 **Novel approaches to the management of bone metastases in patients with breast cancer.**

Semin Oncol. 2002 Jun;29(3 Suppl 11):134-44. Review.

PMID: 12138408 [PubMed - indexed for MEDLINE]


-  **51:** [Ziolkowska M, Kurowska M, Radzikowska A, Luszczykiewicz G, Wiland P, Dziewczopolski W, Filipowicz-Sosnowska A, Pazdur J, Szechinski J, Kowalczewski J, Rell-Bakalarska M, Maslinski W.](#) [Related Articles, Links](#)

 **High levels of osteoprotegerin and soluble receptor activator of nuclear factor kappa B ligand in serum of rheumatoid arthritis patients and their**

normalization after anti-tumor necrosis factor alpha treatment.

Arthritis Rheum. 2002 Jul;46(7):1744-53.

PMID: 12124857 [PubMed - indexed for MEDLINE]


-  **52:** [Ahlen J, Andersson S, Mukohyama H, Roth C, Backman A, Conaway HH, Lerner UH.](#) [Related Articles, Links](#)



Characterization of the bone-resorptive effect of interleukin-11 in cultured mouse calvarial bones.

Bone. 2002 Jul;31(1):242-51.

PMID: 12110441 [PubMed - indexed for MEDLINE]


-  **53:** [Nakamura H, Tsuji T, Hirata A, Yamamoto T.](#) [Related Articles, Links](#)



Localization of osteoprotegerin (OPG) on bone surfaces and cement lines in rat tibia.

J Histochem Cytochem. 2002 Jul;50(7):945-53.

PMID: 12070273 [PubMed - indexed for MEDLINE]


-  **54:** [Hasegawa T, Kikuri T, Takeyama S, Yoshimura Y, Mitome M, Oguchi H, Shirakawa T.](#) [Related Articles, Links](#)



Human periodontal ligament cells derived from deciduous teeth induce osteoclastogenesis in vitro.

Tissue Cell. 2002 Feb;34(1):44-51.

PMID: 11989970 [PubMed - indexed for MEDLINE]


-  **55:** [Redlich K, Hayer S, Maier A, Dunstan CR, Tohidast-Akrad M, Lang S, Turk B, Pietschmann P, Woloszczuk W, Haralambous S, Kollias G, Steiner G, Smolen JS, Schett G.](#) [Related Articles, Links](#)



Tumor necrosis factor alpha-mediated joint destruction is inhibited by targeting osteoclasts with osteoprotegerin.

Arthritis Rheum. 2002 Mar;46(3):785-92.

PMID: 11920416 [PubMed - indexed for MEDLINE]


-  **56:** [Roux S, Meignin V, Quillard J, Meduri G, Guiochon-Mantel A, Ferman J, Milgrom E, Mariette X.](#) [Related Articles, Links](#)



RANK (receptor activator of nuclear factor-kappaB) and RANKL expression in multiple myeloma.

Br J Haematol. 2002 Apr;117(1):86-92.

PMID: 11918537 [PubMed - indexed for MEDLINE]


-  **57:** [Holen I, Croucher PJ, Hamdy FC, Eaton CL.](#) [Related Articles, Links](#)



Osteoprotegerin (OPG) is a survival factor for human prostate cancer cells.

Cancer Res. 2002 Mar 15;62(6):1619-23.

PMID: 11912131 [PubMed - indexed for MEDLINE]


-  **58:** [Roux S, Amazit L, Meduri G, Guiochon-Mantel A, Milgrom E, Mariette X.](#) [Related Articles, Links](#)



RANK (receptor activator of nuclear factor kappa B) and RANK ligand are expressed in giant cell tumors of bone.

Am J Clin Pathol. 2002 Feb;117(2):210-6.

PMID: 11863217 [PubMed - indexed for MEDLINE]


-  **59:** [Kubota K, Sakikawa C, Katsumata M, Nakamura T, Wakabayashi K.](#) [Related Articles, Links](#)




















Platelet-derived growth factor BB secreted from osteoclasts acts as an osteoblastogenesis inhibitory factor.

J Bone Miner Res. 2002 Feb;17(2):257-65.

PMID: 11811556 [PubMed - indexed for MEDLINE]

-  **60:** [Yang X, Halladay D, Onyia JE, Martin TJ, Chandrasekhar S.](#) [Related Articles, Links](#)

Protein Kinase C is a mediator of the synthesis and secretion of

-  osteoprotegerin in osteoblast-like cells.
Biochem Biophys Res Commun. 2002 Jan 11;290(1):42-6.
PMID: 11779130 [PubMed - indexed for MEDLINE]
-  **61:** [Yano K, Shibata O, Mizuno A, Kobayashi F, Higashio K, Morinaga T, Tsuda E.](#) Related Articles, Links
[Morinaga T, Tsuda E.](#)
-  Immunological study on circulating murine osteoprotegerin/osteoclastogenesis inhibitory factor (OPG/OCIF): possible role of OPG/OCIF in the prevention of osteoporosis in pregnancy.
Biochem Biophys Res Commun. 2001 Oct 19;288(1):217-24.
PMID: 11594776 [PubMed - indexed for MEDLINE]
-  **62:** [Feuerherm AJ, Borset M, Seidel C, Sundan A, Leistad L, Ostensen M, Faxvaag A.](#) Related Articles, Links
-  Elevated levels of osteoprotegerin (OPG) and hepatocyte growth factor (HGF) in rheumatoid arthritis.
Scand J Rheumatol. 2001;30(4):229-34.
PMID: 11578019 [PubMed - indexed for MEDLINE]
-  **63:** [Choi Y, Woo KM, Ko SH, Lee YJ, Park SJ, Kim HM, Kwon BS.](#) Related Articles, Links
-  Osteoclastogenesis is enhanced by activated B cells but suppressed by activated CD8(+) T cells.
Eur J Immunol. 2001 Jul;31(7):2179-88.
PMID: 11449372 [PubMed - indexed for MEDLINE]
-  **64:** [Kukita T, Kukita A, Watanabe T, Iijima T.](#) Related Articles, Links
-  Osteoclast differentiation antigen, distinct from receptor activator of nuclear factor kappa B, is involved in osteoclastogenesis under calcitonin-regulated conditions.
J Endocrinol. 2001 Jul;170(1):175-83.
PMID: 11431150 [PubMed - indexed for MEDLINE]
-  **65:** [Kotake S, Udagawa N, Hakoda M, Mogi M, Yano K, Tsuda E, Takahashi K, Furuya T, Ishiyama S, Kim KJ, Saito S, Nishikawa T, Takahashi N, Togari A, Tomatsu T, Suda T, Kamatani N.](#) Related Articles, Links
-  Activated human T cells directly induce osteoclastogenesis from human monocytes: possible role of T cells in bone destruction in rheumatoid arthritis patients.
Arthritis Rheum. 2001 May;44(5):1003-12.
PMID: 11352231 [PubMed - indexed for MEDLINE]
-  **66:** [Atkins GJ, Bouralexis S, Haynes DR, Graves SE, Geary SM, Eydokiou A, Zannettino AC, Hay S, Findlay DM.](#) Related Articles, Links
-  Osteoprotegerin inhibits osteoclast formation and bone resorbing activity in giant cell tumors of bone.
Bone. 2001 Apr;28(4):370-7.
PMID: 11336917 [PubMed - indexed for MEDLINE]
-  **67:** [Chen D, Sarikaya NA, Gunn H, Martin SW, Young JD.](#) Related Articles, Links
-  ELISA methodology for detection of modified osteoprotegerin in clinical studies.
Clin Chem. 2001 Apr;47(4):747-9. No abstract available.
PMID: 11274028 [PubMed - indexed for MEDLINE]
-  **68:** [Wada N, Maeda H, Tanabe K, Tsuda E, Yano K, Nakamuta H, Akamine A.](#) Related Articles, Links
-  Periodontal ligament cells secrete the factor that inhibits osteoclastic differentiation and function: the factor is osteoprotegerin/osteoclastogenesis inhibitory factor.

J Periodontol Res. 2001 Feb;36(1):56-63.
PMID: 11246705 [PubMed - indexed for MEDLINE]

- 69: [Mori K, Miyamoto N, Higuchi Y, Nanba K, Ito M, Tsurudome M, Nishio M, Kawano M, Uchida A, Ito Y.](#) [Related Articles, Links](#)



Cross-talk between RANKL and FRP-1/CD98 Systems: RANKL-mediated osteoclastogenesis is suppressed by an inhibitory anti-CD98 heavy chain mAb and CD98-mediated osteoclastogenesis is suppressed by osteoclastogenesis inhibitory factor.

Cell Immunol. 2001 Feb 1;207(2):118-26.
PMID: 11243701 [PubMed - indexed for MEDLINE]

- 70: [O'Brien EA, Williams JH, Marshall MJ.](#) [Related Articles, Links](#)



Osteoprotegerin is produced when prostaglandin synthesis is inhibited causing osteoclasts to detach from the surface of mouse parietal bone and attach to the endocranial membrane.

Bone. 2001 Feb;28(2):208-14.
PMID: 11182380 [PubMed - indexed for MEDLINE]

- 71: [Yun TJ, Tallquist MD, Aicher A, Rafferty KL, Marshall AJ, Moon JJ, Ewings ME, Mohaupt M, Herring SW, Clark EA.](#) [Related Articles, Links](#)



Osteoprotegerin, a crucial regulator of bone metabolism, also regulates B cell development and function.

J Immunol. 2001 Feb 1;166(3):1482-91.
PMID: 11160187 [PubMed - indexed for MEDLINE]

- 72: [Shalhoub V, Elliott G, Chiu L, Manoukian R, Kelley M, Hawkins N, Davy E, Shimamoto G, Beck J, Kaufman SA, Van G, Scully S, Qi M, Grisanti M, Dunstan C, Boyle WJ, Lacey DL.](#) [Related Articles, Links](#)



Characterization of osteoclast precursors in human blood.

Br J Haematol. 2000 Nov;111(2):501-12.
PMID: 11122091 [PubMed - indexed for MEDLINE]

- 73: [Miyamoto T, Arai F, Ohneda O, Takagi K, Anderson DM, Suda T.](#) [Related Articles, Links](#)



An adherent condition is required for formation of multinuclear osteoclasts in the presence of macrophage colony-stimulating factor and receptor activator of nuclear factor kappa B ligand.

Blood. 2000 Dec 15;96(13):4335-43.
PMID: 11110710 [PubMed - indexed for MEDLINE]

- 74: [Kinpara K, Mogi M, Kuzushima M, Togari A.](#) [Related Articles, Links](#)



Osteoclast differentiation factor in human osteosarcoma cell line.

J Immunoassay. 2000 Nov;21(4):327-40.
PMID: 11071251 [PubMed - indexed for MEDLINE]

- 75: [Fox SW, Fuller K, Bayley KE, Lean JM, Chambers TJ.](#) [Related Articles, Links](#)



TGF-beta 1 and IFN-gamma direct macrophage activation by TNF-alpha to osteoclastic or cytotoxic phenotype.

J Immunol. 2000 Nov 1;165(9):4957-63.
PMID: 11046022 [PubMed - indexed for MEDLINE]

- 76: [Greevic D, Lee SK, Marusic A, Lorenzo JA.](#) [Related Articles, Links](#)



Depletion of CD4 and CD8 T lymphocytes in mice in vivo enhances 1,25-dihydroxyvitamin D3-stimulated osteoclast-like cell formation in vitro by a mechanism that is dependent on prostaglandin synthesis.

J Immunol. 2000 Oct 15;165(8):4231-8.
PMID: 11035056 [PubMed - indexed for MEDLINE]

- 77: [Borset M, Hjertner O, Yaccoby S, Epstein J, Sanderson RD.](#) [Related Articles, Links](#)



Syndecan-1 is targeted to the uropods of polarized myeloma cells where it promotes adhesion and sequesters heparin-binding proteins.

Blood. 2000 Oct 1;96(7):2528-36.

PMID: 11001907 [PubMed - indexed for MEDLINE]



78: [Rani CS, MacDougall M.](#)

[Related Articles, Links](#)



Dental cells express factors that regulate bone resorption.

Mol Cell Biol Res Commun. 2000 Mar;3(3):145-52.

PMID: 10860862 [PubMed - indexed for MEDLINE]



79: [Takayanagi H, Iizuka H, Juji T, Nakagawa T, Yamamoto A, Miyazaki T, Koshihara Y, Oda H, Nakamura K, Tanaka S.](#)

[Related Articles, Links](#)



Involvement of receptor activator of nuclear factor kappaB ligand/osteoclast differentiation factor in osteoclastogenesis from synoviocytes in rheumatoid arthritis.

Arthritis Rheum. 2000 Feb;43(2):259-69.

PMID: 10693864 [PubMed - indexed for MEDLINE]



80: [Nakagawa N, Yasuda H, Yano K, Mochizuki S, Kobayashi N, Fujimoto H, Yamaguchi K, Shima N, Morinaga T, Higashio K.](#)

[Related Articles, Links](#)



Basic fibroblast growth factor inhibits osteoclast formation induced by 1alpha,25-dihydroxyvitamin D(3) through suppressing the production of osteoclast differentiation factor.

Biochem Biophys Res Commun. 1999 Nov;265(1):45-50.

PMID: 10548488 [PubMed - indexed for MEDLINE]



81: [Yasuda H, Shima N, Nakagawa N, Yamaguchi K, Kinoshita M, Goto M, Mochizuki S, Tsuda E, Morinaga T, Udagawa N, Takahashi N, Suda T, Higashio K.](#)

[Related Articles, Links](#)



A novel molecular mechanism modulating osteoclast differentiation and function.

Bone. 1999 Jul;25(1):109-13.

PMID: 10423033 [PubMed - indexed for MEDLINE]



82: [Yano K, Tsuda E, Washida N, Kobayashi F, Goto M, Harada A, Ikeda K, Higashio K, Yamada Y.](#)

[Related Articles, Links](#)



Immunological characterization of circulating osteoprotegerin/osteoclastogenesis inhibitory factor: increased serum concentrations in postmenopausal women with osteoporosis.

J Bone Miner Res. 1999 Apr;14(4):518-27.

PMID: 10234572 [PubMed - indexed for MEDLINE]



83: [Hsu H, Lacey DL, Dunstan CR, Solovyev I, Colombero A, Timms E, Tan HL, Elliott G, Kelley MJ, Sarosi J, Wang J, Xia XZ, Elliott R, Chiu L, Black T, Scully S, Capparelli C, Morony S, Shimamoto G, Bass MB, Boyle WJ.](#)

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Tumor necrosis factor receptor family member RANK mediates osteoclast differentiation and activation induced by osteoprotegerin ligand.

Proc Natl Acad Sci U S A. 1999 Mar 30;96(7):3540-5.

PMID: 10097072 [PubMed - indexed for MEDLINE]



84: [Nakagawa N, Kinoshita M, Yamaguchi K, Shima N, Yasuda H, Yano K, Morinaga T, Higashio K.](#)

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RANK is the essential signaling receptor for osteoclast differentiation factor in osteoclastogenesis.












Biochem Biophys Res Commun. 1998 Dec 18;253(2):395-400.

PMID: 9878548 [PubMed - indexed for MEDLINE]



85: [Murakami T, Yamamoto M, Ono K, Nishikawa M, Nagata N, Motoyoshi K, Akatsu T.](#)

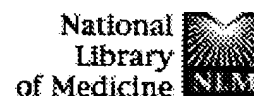
[Related Articles, Links](#)

-  Transforming growth factor-beta1 increases mRNA levels of osteoclastogenesis inhibitory factor in osteoblastic/stromal cells and inhibits the survival of murine osteoclast-like cells.
Biochem Biophys Res Commun. 1998 Nov 27;252(3):747-52.
PMID: 9837778 [PubMed - indexed for MEDLINE]
-  **86:** [Takai H, Kanematsu M, Yano K, Tsuda E, Higashio K, Ikeda K, Watanabe K, Yamada Y.](#) [Related Articles, Links](#)
-  Transforming growth factor-beta stimulates the production of osteoprotegerin/osteoclastogenesis inhibitory factor by bone marrow stromal cells.
J Biol Chem. 1998 Oct 16;273(42):27091-6.
PMID: 9765225 [PubMed - indexed for MEDLINE]
-  **87:** [Emery JG, McDonnell P, Burke MB, Deen KC, Lyn S, Silverman C, Dul E, Appelbaum ER, Eichman C, DiPrinzio R, Dodds RA, James IE, Rosenberg M, Lee JC, Young PR.](#) [Related Articles, Links](#)
-  Osteoprotegerin is a receptor for the cytotoxic ligand TRAIL.
J Biol Chem. 1998 Jun 5;273(23):14363-7.
PMID: 9603945 [PubMed - indexed for MEDLINE]
-  **88:** [Tsukii K, Shima N, Mochizuki S, Yamaguchi K, Kinoshita M, Yano K, Shibata O, Udagawa N, Yasuda H, Suda T, Higashio K.](#) [Related Articles, Links](#)
-  Osteoclast differentiation factor mediates an essential signal for bone resorption induced by 1 alpha,25-dihydroxyvitamin D3, prostaglandin E2, or parathyroid hormone in the microenvironment of bone.
Biochem Biophys Res Commun. 1998 May 19;246(2):337-41.
PMID: 9610359 [PubMed - indexed for MEDLINE]
-  **89:** [Yasuda H, Shima N, Nakagawa N, Mochizuki SI, Yano K, Fujise N, Sato Y, Goto M, Yamaguchi K, Kuriyama M, Kanno T, Murakami A, Tsuda E, Morinaga T, Higashio K.](#) [Related Articles, Links](#)
-  Identity of osteoclastogenesis inhibitory factor (OCIF) and osteoprotegerin (OPG): a mechanism by which OPG/OCIF inhibits osteoclastogenesis in vitro.
Endocrinology. 1998 Mar;139(3):1329-37.
PMID: 9492069 [PubMed - indexed for MEDLINE]
-  **90:** [Miyamoto A, Kunisada T, Hemmi H, Yamane T, Yasuda H, Miyake K, Yamazaki H, Hayashi SI.](#) [Related Articles, Links](#)
-  Establishment and characterization of an immortal macrophage-like cell line inducible to differentiate to osteoclasts.
Biochem Biophys Res Commun. 1998 Jan 26;242(3):703-9.
PMID: 9464281 [PubMed - indexed for MEDLINE]

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Vitamin A differentially regulates RANKL and OPG expression in human osteoblasts.

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PMID: 15313187 [PubMed - in process]

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New insight in the mechanism of osteoclast activation and formation in multiple myeloma: focus on the receptor activator of NF-kappaB ligand (RANKL).

Exp Hematol. 2004 Aug;32(8):685-91.

PMID: 15308315 [PubMed - in process]

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Bone metabolism in patients more than five years after bone marrow transplantation.

Bone Marrow Transplant. 2004 Sep;34(6):491-6.

PMID: 15286695 [PubMed - in process]

☐ 4: [Sohen S.](#)

[Related Articles, Links](#)



[Glucocorticoid-induced osteoporosis in patients with rheumatoid arthritis and collagen diseases]

Nippon Rinsho. 2004 Feb;62 Suppl 2:673-6. Review. Japanese. No abstract available.

PMID: 15035207 [PubMed - indexed for MEDLINE]

☐ 5: [O'Gradaigh D, Ireland D, Bord S, Compston JE.](#)

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Joint erosion in rheumatoid arthritis: interactions between tumour necrosis factor alpha, interleukin 1, and receptor activator of nuclear factor kappaB ligand (RANKL) regulate osteoclasts.

Ann Rheum Dis. 2004 Apr;63(4):354-9.

PMID: 15020327 [PubMed - indexed for MEDLINE]

☐ 6: [Kotter I, Stubiger N.](#)

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Therapeutic implications for interferon-alpha in arthritis.

J Rheumatol. 2004 Mar;31(3):624-5; author reply 625. No abstract available. Erratum in: J Rheumatol. 2004 Apr;31(4):833.

PMID: 14994421 [PubMed - indexed for MEDLINE]

☐ 7: [Suda K, Udagawa N, Sato N, Takami M, Itoh K, Woo JT, Takahashi N, Nagai K.](#)

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Suppression of osteoprotegerin expression by prostaglandin E2 is crucially involved in lipopolysaccharide-induced osteoclast formation.

J Immunol. 2004 Feb 15;172(4):2504-10.

PMID: 14764723 [PubMed - indexed for MEDLINE]

☐ 8: [Zwerina J, Hayer S, Tohidast-Akrad M, Bergmeister H, Redlich K,](#)

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













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












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Arthritis Rheum. 2004 Jan;50(1):277-90.
PMID: 14730626 [PubMed - indexed for MEDLINE]
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Cancer Res. 2003 Sep 1;63(17):5438-45.
PMID: 14500379 [PubMed - indexed for MEDLINE]
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-  **Human chaperonin 60 (Hsp60) stimulates bone resorption: structure/function relationships.**
Bone. 2003 Sep;33(3):419-25.
PMID: 13678784 [PubMed - indexed for MEDLINE]
-  **11:** Viereck V, Grundker C, Blaschke S, Niederkleine B, Siggelkow H, Frosch KH, Raddatz D, Emons G, Hofbauer LC. [Related Articles](#), [Links](#)
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J Clin Endocrinol Metab. 2003 Sep;88(9):4206-13.
PMID: 12970288 [PubMed - indexed for MEDLINE]
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-  **Prostate cancer cells-osteoblast interaction shifts expression of growth/survival-related genes in prostate cancer and reduces expression of osteoprotegerin in osteoblasts.**
Clin Cancer Res. 2003 Jul;9(7):2587-97.
PMID: 12855635 [PubMed - indexed for MEDLINE]
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J Rheumatol. 2003 May;30(5):934-40.
PMID: 12734885 [PubMed - indexed for MEDLINE]
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-  **Estrogen receptor-beta modulates synthesis of bone matrix proteins in human osteoblast-like MG63 cells.**
J Cell Biochem. 2003 May 1;89(1):152-64.
PMID: 12682916 [PubMed - indexed for MEDLINE]
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Ann Rheum Dis. 2003 Apr;62(4):303-7.
PMID: 12634226 [PubMed - indexed for MEDLINE]
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-  **The effects of estrogen on osteoprotegerin, RANKL, and estrogen receptor expression in human osteoblasts.**
Bone. 2003 Feb;32(2):136-41.


PMID: 12633785 [PubMed - indexed for MEDLINE]


-  **17:** [Sordillo EM, Pearse RN.](#) Related Articles, Links
 **RANK-Fc: a therapeutic antagonist for RANK-L in myeloma.**
Cancer. 2003 Feb 1;97(3 Suppl):802-12. Review.
PMID: 12548579 [PubMed - indexed for MEDLINE]
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 **RANK ligand and osteoprotegerin in myeloma bone disease.**
Blood. 2003 Mar 15;101(6):2094-8. Epub 2002 Nov 07. Review.
PMID: 12424190 [PubMed - indexed for MEDLINE]
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 **IKKalpha, IKKbeta, and NEMO/IKKgamma are each required for the NF-kappa B-mediated inflammatory response program.**
J Biol Chem. 2002 Nov 22;277(47):45129-40. Epub 2002 Sep 06.
PMID: 12221085 [PubMed - indexed for MEDLINE]
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 **1,25(OH)2 vitamin D3-stimulated osteoclast formation in spleen-osteoblast cocultures is mediated in part by enhanced IL-1 alpha and receptor activator of NF-kappa B ligand production in osteoblasts.**
J Immunol. 2002 Sep 1;169(5):2374-80.
PMID: 12193704 [PubMed - indexed for MEDLINE]
-  **21:** [Hofbauer LC, Hicok KC, Chen D, Khosla S.](#) Related Articles, Links
 **Regulation of osteoprotegerin production by androgens and anti-androgens in human osteoblastic lineage cells.**
Eur J Endocrinol. 2002 Aug;147(2):269-73.
PMID: 12153751 [PubMed - indexed for MEDLINE]
-  **22:** [Petersson M, Lagundzija A, Stark A, Bucht E.](#) Related Articles, Links
 **Oxytocin stimulates proliferation of human osteoblast-like cells.**
Peptides. 2002 Jun;23(6):1121-6.
PMID: 12126740 [PubMed - indexed for MEDLINE]
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 **Activation of peroxisome proliferator-activated receptor gamma inhibits osteoprotegerin gene expression in human aortic smooth muscle cells.**
Biochem Biophys Res Commun. 2002 Jun 14;294(3):597-601.
PMID: 12056809 [PubMed - indexed for MEDLINE]
-  **24:** [Gruber R, Karreth F, Fischer MB, Watzek G.](#) Related Articles, Links
 **Platelet-released supernatants stimulate formation of osteoclast-like cells through a prostaglandin/RANKL-dependent mechanism.**
Bone. 2002 May;30(5):726-32.
PMID: 11996911 [PubMed - indexed for MEDLINE]
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 **Efficacy of ex vivo OPG gene therapy in preventing wear debris induced osteolysis.**
J Orthop Res. 2002 Mar;20(2):169-73.
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Phytoestrogen genistein stimulates the production of osteoprotegerin by


 **human trabecular osteoblasts.**
J Cell Biochem. 2002;84(4):725-35.
PMID: 11835398 [PubMed - indexed for MEDLINE]


 **27:** [Kim J, Wu H, Hawthorne L, Rafii S, Laurence J.](#) [Related Articles, Links](#)


 **Endothelial cell apoptotic genes associated with the pathogenesis of thrombotic microangiopathies: an application of oligonucleotide genechip technology.**
Microvasc Res. 2001 Sep;62(2):83-93.
PMID: 11516238 [PubMed - indexed for MEDLINE]


 **28:** [Fazzalari NL, Kuliwaba JS, Atkins GJ, Forwood MR, Findlay DM.](#) [Related Articles, Links](#)





 **The ratio of messenger RNA levels of receptor activator of nuclear factor kappaB ligand to osteoprotegerin correlates with bone remodeling indices in normal human cancellous bone but not in osteoarthritis.**
J Bone Miner Res. 2001 Jun;16(6):1015-27.
PMID: 11393778 [PubMed - indexed for MEDLINE]

 **29:** [Atkins GJ, Bouralexis S, Haynes DR, Graves SE, Geary SM, Evdokiou A, Zannettino AC, Hay S, Findlay DM.](#) [Related Articles, Links](#)

 **Osteoprotegerin inhibits osteoclast formation and bone resorbing activity in giant cell tumors of bone.**
Bone. 2001 Apr;28(4):370-7.
PMID: 11336917 [PubMed - indexed for MEDLINE]

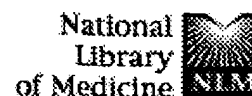
 **30:** [Takeuchi T, Tsuboi T, Arai M, Togari A.](#) [Related Articles, Links](#)

 **Adrenergic stimulation of osteoclastogenesis mediated by expression of osteoclast differentiation factor in MC3T3-E1 osteoblast-like cells.**
Biochem Pharmacol. 2001 Mar 1;61(5):579-86.
PMID: 11239501 [PubMed - indexed for MEDLINE]

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☐ 1: [Jacobson A, Johansson S, Branting M, Melhus H.](#) Related Articles, Links

Vitamin A differentially regulates RANKL and OPG expression in human osteoblasts.

Biochem Biophys Res Commun. 2004 Sep 10;322(1):162-7.

PMID: 15313187 [PubMed - in process]

☐ 2: [De Wilde A, Lieberherr M, Colin C, Pointillart A.](#) Related Articles, Links

A low dose of daidzein acts as an ERbeta-selective agonist in trabecular osteoblasts of young female piglets.

J Cell Physiol. 2004 Aug;200(2):253-62.

PMID: 15174095 [PubMed - indexed for MEDLINE]

☐ 3: [Korcok J, Raimundo LN, Ke HZ, Sims SM, Dixon SJ.](#) Related Articles, Links

Extracellular nucleotides act through P2X7 receptors to activate NF-kappaB in osteoclasts.

J Bone Miner Res. 2004 Apr;19(4):642-51.

PMID: 15005852 [PubMed - in process]

☐ 4: [Uemura H, Yasui T, Umino Y, Niki H, Takikawa M, Saito S, Furumoto H, Irahara M.](#) Related Articles, Links

Circulating osteoprotegerin in women during GnRH-agonist treatment and their relationships with mineral components and biomarkers of bone turnover.

Bone. 2003 Nov;33(5):860-6.

PMID: 14623063 [PubMed - indexed for MEDLINE]

☐ 5: [Seidlova-Wuttke D, Becker T, Christoffel V, Jarry H, Wuttke W.](#) Related Articles, Links

Silymarin is a selective estrogen receptor beta (ERbeta) agonist and has estrogenic effects in the metaphysis of the femur but no or antiestrogenic effects in the uterus of ovariectomized (ovx) rats.

J Steroid Biochem Mol Biol. 2003 Aug;86(2):179-88.

PMID: 14568570 [PubMed - indexed for MEDLINE]

☐ 6: [Meghji S, Lillicrap M, Maguire M, Tabona P, Gaston JS, Poole S, Henderson B.](#) Related Articles, Links

Human chaperonin 60 (Hsp60) stimulates bone resorption: structure/function relationships.

Bone. 2003 Sep;33(3):419-25.

PMID: 13678784 [PubMed - indexed for MEDLINE]

☐ 7: [Khosla S, Atkinson EJ, Dunstan CR, O'Fallon WM.](#) Related Articles, Links

Effect of estrogen versus testosterone on circulating osteoprotegerin and other cytokine levels in normal elderly men.

J Clin Endocrinol Metab. 2002 Apr;87(4):1550-4.

PMID: 11932280 [PubMed - indexed for MEDLINE]

☐ 8: [Takeuchi T, Tsuboi T, Arai M, Togari A.](#) Related Articles, Links



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Biochem Pharmacol. 2001 Mar 1;61(5):579-86.

PMID: 11239501 [PubMed - indexed for MEDLINE]



9: [Mbalaviele G, Abu-Amer Y, Meng A, Jaiswal R, Beck S, Pittenger MF, Thiede MA, Marshak DR](#) [Related Articles, Links](#)



Activation of peroxisome proliferator-activated receptor-gamma pathway inhibits osteoclast differentiation.

J Biol Chem. 2000 May 12;275(19):14388-93.

PMID: 10799521 [PubMed - indexed for MEDLINE]

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52 FILES SEARCHED...
L1 9577 OSTEOPROTEGERIN

=> s osteoprotegerin binding protein
16 FILES SEARCHED...
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63 FILES SEARCHED...
L2 143 OSTEOPROTEGERIN BINDING PROTEIN

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L3 126 DUP REM L2 (17 DUPLICATES REMOVED)

=> D L3 1-126

L3 ANSWER 1 OF 126 USPATFULL on STN
AN 2004:203879 USPATFULL
TI Rank-ligand-induced sodium/proton antiporter polypeptides
IN Bird, Timothy A., Bainbridge, WA, UNITED STATES
Tometsko, Mark E., Seattle, WA, UNITED STATES
Dougall, William C., Seattle, WA, UNITED STATES
Mosley, Bruce A., Seattle, WA, UNITED STATES
PI US 2004157771 A1 20040812
AI US 2003-372613 A1 20030221 (10)
PRAI US 2002-361891P 20020228 (60)
DT Utility
FS APPLICATION
LN.CNT 5274
INCL INCLM: 514/012.000
INCLS: 530/350.000; 435/069.100; 435/320.100; 435/325.000; 536/023.500
NCL NCLM: 514/012.000
NCLS: 530/350.000; 435/069.100; 435/320.100; 435/325.000; 536/023.500
IC [7]
ICM: A61K038-17
ICS: C07K014-705; C07H021-04
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 2 OF 126 CIN COPYRIGHT 2004 ACS on STN
AN 33(4):1819S CIN
TI Patent applications
SO Biotechnol. News, 8 Jan 2004 (20040108), 24(1), p. 11. ISSN: 0273-3226;
CODEN: BINWEY.
LA English

L3 ANSWER 3 OF 126 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 1
AN 2003:435069 CAPLUS
DN 139:35078
TI Selective binding agents of ***osteoprotegerin*** ***binding***
protein (OPGbp), such as antagonist antibodies, for use in the
treatment of bone disorders
IN Deshpande, Rajendra V.; Hitz, Anna; Boyle, William James; Sullivan, John
K.
PA Amgen Inc., USA
SO U.S. Pat. Appl. Publ., 123 pp., Cont.-in-part of U.S. Ser. No. 511,139,
abandoned.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003103978	A1	20030605	US 2001-791153	20010222
	WO 2001062932	A1	20010830	WO 2001-US5973	20010223
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 BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
 EP 1257648 A1 20021120 EP 2001-911158 20010223
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
 JP 2003523772 T2 20030812 JP 2001-562706 20010223
 PRAI US 2000-511139 B2 20000223
 US 2001-791153 A 20010222
 WO 2001-US5973 W 20010223

L3 ANSWER 4 OF 126 IFIPAT COPYRIGHT 2004 IFI on STN DUPLICATE 2

AN 10360068 IFIPAT;IFIUDB;IFICDB

TI ANTIBODIES SPECIFIC FOR ***OSTEOPROTEGERIN*** ***BINDING***
 PROTEINS AND METHOD OF USE; NUCLEOTIDE SEQUENCES CODING
 POLYPEPTIDE FOR USE IN TREATMENT OF BONE DISORDERS

IN BOYLE WILLIAM J

PA Unassigned Or Assigned To Individual (68000)

PI US 2003104485 A1 20030605

AI US 1998-79569 19980514

RLI US 1997-842842 19970416 DIVISION

5843678

FI US 2003104485 20030605

US 5843678

DT Utility; Patent Application - First Publication

FS CHEMICAL
APPLICATION

CLMN 33

GI 3 Figure(s).

FIG. 1. Structure and sequence of the 32D-F3 insert encoding OPG binding protein. Predicted transmembrane domain and sites for asparagine-linked carbohydrate chains are underlined.

FIG. 2. OPG binding protein expression in COS-7 cells transfected with pcDNA/32D-F3. Cells were lipofected with pcDNA/32D-F3 DNA, the assayed for binding to either goat antihuman IgG1 alkaline phosphatase conjugate (secondary alone), human OPG(22-201)-Fc plus secondary (OPG-Fc), or a chimeric ATAR extracellular domain-Fc fusion protein (sATAR-Fc). ATAR is a new member of the TNFR superfamily, and the sATAR-Fc fusion protein serves as a control for both human IgG1 Fc domain binding, and generic TNFR related protein, binding to 32D cell surface molecules.

FIG. 3. Expression of OPG binding protein in human tissues. Northern blot analysis of human tissue mRNA (Clontech) using a radiolabeled 32D-F3 derived hybridization probe. Relative molecular mass is indicated at the left in kilobase pairs (kb). Arrowhead on right side indicates the migration of an approximately 2.5 kb transcript detected in lymph node mRNA. A very faint band of the same mass is also detected in fetal liver.

L3 ANSWER 5 OF 126 IFIPAT COPYRIGHT 2004 IFI on STN DUPLICATE 3

AN 10356071 IFIPAT;IFIUDB;IFICDB

TI ***OSTEOPROTEGERIN*** ***BINDING*** ***PROTEINS*** ; FOR

THERAPY OF BONE DISEASES, SUCH AS OSTEOPOROSIS, BONE LOSS FROM ARTHRITIS, PAGET'S DISEASE, AND HYPERCALCEMIA

IN BOYLE WILLIAM J

PA Unassigned Or Assigned To Individual (68000)

PI US 2003100488 A1 20030529

AI US 1998-211297 19981214

RLI US 1997-880855 19970623 CONTINUATION

US 1997-842842 19970416 CONTINUATION-IN-PART 5843678

FI US 2003100488 20030529

US 5843678

DT Utility; Patent Application - First Publication

FS CHEMICAL
APPLICATION

CLMN 36

GI 9 Figure(s).

FIG. 1. Structure and sequence of the 32D-F3 insert encoding OPG binding protein. Predicted transmembrane domain and sites for asparagine-linked carbohydrate chains are underlined.

FIG. 2. OPG binding protein expression in COS-7 cells transfected with pcDNA/32D-F3. Cells were lipofected with pcDNA/ 32D-F3 DNA, the assayed for binding to either goat anti-human IgG1 alkaline phosphatase conjugate (secondary alone), human OPG(22-201)-Fc plus secondary (OPG-Fc), or a chimeric ATAR extracellular domain-Fc fusion protein (sATAR-Fc). ATAR is a new member of the TNFR superfamily, and the sATAR-Fc fusion protein serves as a control for both human IgG1 Fc domain binding, and generic

FIG. 3. Expression of OPG binding protein in human tissues. Northern blot analysis of human tissue mRNA (Clontech) using a radiolabeled 32D-F3 derived hybridization probe. Relative molecular mass is indicated at the left in kilobase pairs (kb). Arrowhead on right side indicates the migration of an approximately 2.5 kb transcript detected in lymph node mRNA. A very faint band of the same mass is also detected in fetal liver.

FIG. 4. Structure and sequence of the pcDNA/hu OPGbp 1.1 insert encoding the human OPG binding protein. The predicted transmembrane domain and site for asparagine-linked carbohydrate chains are underlined.

FIG. 5. Stimulation of osteoclast development in vitro from bone marrow macrophage and ST2 cell cocultures treated with recombinant murine OPG binding protein (158-316). Cultures were treated with varying concentrations of murine OPG binding protein ranging from 1.6 to 500 ng/ml. After 8-10 days, cultures were lysed, and TRAP activity was measured by solution assay. In addition, some cultures were simultaneously treated with 1, 10, 100, 500, and 1000 ng/ml of recombinant murine OPG (22-401)-Fc protein. Murine OPG binding protein induces a dosedependent stimulation in osteoclast formation, whereas OPG (22401)-Fc inhibits osteoclast formation.

FIG. 6. Stimulation of osteoclast development from bone marrow precursors in vitro in the presence of M-CSF and murine OPG binding protein (158-316). Mouse bone marrow was harvested, and cultured in the presence 250, 500, 1000, and 2000 U/ml of M-CSF. Varying concentrations of OPG binding protein (158-316), ranging from 1.6 to 500 ng/ml, were added to these same cultures. Osteoclast development was measured by TRAP solution assay.

FIG. 7. Osteoclasts derived from bone marrow cells in the presence of both M-CSF and OPG binding protein (158-316) resorb bone in vitro. Bone marrow cells treated with either M-CSF, OPG binding protein, or with both factors combined, were plated onto bone slices in culture wells, and were allowed to develop into mature osteoclasts. The resulting cultures were then stained with Toluidine Blue (left column), or histochemically to detect TRAP enzyme activity (right column). In cultures receiving both factors, mature osteoclasts were formed that were capable of eroding bone as judged by the presence of blue stained pits on the bone surface. This correlated with the presence of multiple large, multinucleated, TRAP positive cells.

FIG. 8. Graph showing the whole blood ionized calcium (iCa) levels from mice injected with OPG binding protein, 51 hours after the first injection, and in mice also receiving concurrent OPG administration. OPG binding protein significantly and dose dependently increased iCa levels. OPG (1 mg/kg/day) completely blocked the increase in iCa at a dose of OPG binding protein of 5 ug/day, and partially blocked the increase at a dose of OPG binding protein of 25 ug/day. (*), different to vehicle treated control (p less-than 0.05). (#), OPG treated iCa level significantly different to level in mice receiving that dose of OPG binding protein alone (p less-than 0.05).

FIG. 9. Radiographs of the left femur and tibia in mice treated with 0, 5, 25 or 100 ug/day of OPG binding protein for 3.5 days. There is a dose dependent decrease in bone density evident most clearly in the proximal tibial metaphysis of these mice, and that is profound at a dose of 100 ug/day.

L3 ANSWER 6 OF 126 USPATFULL on STN
 AN 2003:277129 USPATFULL
 TI Peptides and related molecules that bind to TALL-1
 IN Min, Hosung, Newbury Park, CA, UNITED STATES
 Hsu, Hailing, Moorpark, CA, UNITED STATES
 Xiong, Fei, Thousand Oaks, CA, UNITED STATES
 PA Amgen Inc. (U.S. corporation)
 PI US 2003195156 A1 20031016
 AI US 2002-145206 A1 20020513 (10)
 PRAI US 2001-290196P 20010511 (60)
 DT Utility
 FS APPLICATION
 LN.CNT 2728
 INCL INCLM: 514/014.000
 INCLS: 514/015.000
 NCL NCLM: 514/014.000
 NCLS: 514/015.000
 IC [7]
 ICM: A61K038-10
 ICS: A61K038-08
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AN 2003:146245 USPATFULL
TI TALL-1 receptor molecules and uses thereof
IN Hsu, Hailing, Moorpark, CA, UNITED STATES
PA Amgen Inc. A Corporation of the State of Delaware (U.S. corporation)
PI US 2003099990 A1 20030529
AI US 2002-251947 A1 20020920 (10)
PRAI US 2001-324238P 20010921 (60)
DT Utility
FS APPLICATION
LN.CNT 4507
INCL INCLM: 435/006.000
INCLS: 435/007.200; 435/069.100; 435/320.100; 435/325.000; 530/350.000;
536/023.500
NCL NCLM: 435/006.000
NCLS: 435/007.200; 435/069.100; 435/320.100; 435/325.000; 530/350.000;
536/023.500
IC [7]
ICM: C12Q001-68
ICS: G01N033-53; G01N033-567; C07H021-04; C12P021-02; C12N005-06;
C07K014-705

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 8 OF 126 USPATFULL on STN
AN 2003:57548 USPATFULL
TI Composition and methods for the production of biological tissues and
tissue constructs
IN Mizuno, Shuichi, Brookline, MA, UNITED STATES
Tokuno, Toshimasa, Tokyo, JAPAN
Berlowitz Tarrant, Laurence J., Easthampton, MA, UNITED STATES
PA Histogenics Corporation, Easthampton, MA (U.S. corporation)
PI US 2003040113 A1 20030227
AI US 2002-104677 A1 20020322 (10)
PRAI US 2001-278534P 20010323 (60)
US 2002-352085P 20020124 (60)
DT Utility
FS APPLICATION
LN.CNT 1569
INCL INCLM: 435/395.000
NCL NCLM: 435/395.000
IC [7]
ICM: C12N005-02

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 9 OF 126 USPATFULL on STN
AN 2003:29843 USPATFULL
TI Use of rank antagonists to treat cancer
IN Dougall, William C., Seattle, WA, UNITED STATES
PI US 2003021785 A1 20030130
AI US 2002-166232 A1 20020605 (10)
PRAI US 2001-296670P 20010606 (60)
DT Utility
FS APPLICATION
LN.CNT 1870
INCL INCLM: 424/146.100
INCLS: 514/012.000; 514/044.000
NCL NCLM: 424/146.100
NCLS: 514/012.000; 514/044.000
IC [7]
ICM: A61K048-00
ICS: A61K038-17; A61K039-395

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 10 OF 126 USPATFULL on STN
AN 2003:23315 USPATFULL
TI Therapeutic use of rank antagonists
IN Dougall, William C., Seattle, WA, UNITED STATES
Anderson, Dirk M., Seattle, WA, UNITED STATES
PI US 2003017151 A1 20030123
AI US 2002-151071 A1 20020517 (10)
PRAI US 2001-291919P 20010517 (60)
DT Utility
FS APPLICATION
LN.CNT 2176
INCL INCLM: 424/143.100
INCLS: 514/044.000

IC NCLS: 514/044.000
[7]
ICM: A61K048-00
ICS: A61K039-395
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 11 OF 126 USPATFULL on STN
AN 2003:17899 USPATFULL
TI Stimulation of osteogenesis using rank ligand fusion proteins
IN Lam, Jonathan, West Memphis, AR, UNITED STATES
Ross, F. Patrick, Olivette, MO, UNITED STATES
Teitelbaum, Steven L., University City, MO, UNITED STATES
PA Barnes-Jewish Hospital (2)
PI US 2003013651 A1 20030116
AI US 2002-105057 A1 20020322 (10)
PRAI US 2001-277855P 20010322 (60)
US 2001-311163P 20010809 (60)
US 2001-329231P 20011012 (60)
US 2001-328876P 20011012 (60)
US 2001-329393P 20011015 (60)
DT Utility
FS APPLICATION
LN.CNT 1942
INCL INCLM: 514/012.000
NCL NCLM: 514/012.000
IC [7]
ICM: A61K038-17
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 12 OF 126 USPATFULL on STN DUPLICATE 4
AN 2002:156701 USPATFULL
TI Methods and compositions of matter concerning APRIL/G70, BCMA,
BLYS/AGP-3 and TACI
IN Theill, Lars Eyde, Thousand Oaks, CA, UNITED STATES
Yu, Gang, Thousand Oaks, CA, UNITED STATES
PI US 2002081296 A1 20020627
US 6774106 B2 20040810
AI US 2001-854864 A1 20010514 (9)
PRAI US 2000-204039P 20000512 (60)
US 2000-214591P 20000627 (60)
DT Utility
FS APPLICATION
LN.CNT 2383
INCL INCLM: 424/144.100
INCLS: 424/155.100
NCL NCLM: 514/012.000
NCLS: 424/185.100; 424/192.100
IC [7]
ICM: A61K039-395
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 13 OF 126 USPATFULL on STN
AN 2002:287553 USPATFULL
TI Receptor from TNF family
IN Boyle, William J., Moorpark, CA, UNITED STATES
Hsu, Hailing, Moorpark, CA, UNITED STATES
PI US 2002160416 A1 20021031
AI US 2001-779050 A1 20010212 (9)
PRAI US 2000-181800P 20000211 (60)
DT Utility
FS APPLICATION
LN.CNT 2856
INCL INCLM: 435/007.100
INCLS: 530/389.100; 530/395.000; 536/053.000
NCL NCLM: 435/007.100
NCLS: 530/389.100; 530/395.000; 536/053.000
IC [7]
ICM: G01N033-53
ICS: C07K016-46; C08B037-00
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 14 OF 126 USPATFULL on STN
AN 2002:272856 USPATFULL
TI TNF receptor-like molecules and uses thereof
IN Theill, Lars Eyde, Thousand Oaks, CA, UNITED STATES

Slubiger, Scott Michael, Woodland Hills, CA, UNITED STATES
 Yu, Gang, Thousand Oaks, CA, UNITED STATES
 Senaldi, Giorgio, Thousand Oaks, CA, UNITED STATES
 PI US 2002150977 A1 20021017
 AI US 2001-948018 A1 20010905 (9)
 PRAI US 2000-230191P 20000905 (60)
 DT Utility
 FS APPLICATION
 LN.CNT 5781
 INCL INCLM: 435/069.100
 INCLS: 435/325.000; 435/320.100; 530/350.000; 536/023.500; 435/194.000
 NCL NCLM: 435/069.100
 NCLS: 435/325.000; 435/320.100; 530/350.000; 536/023.500; 435/194.000
 IC [7]
 ICM: C12P021-02
 ICS: C12N005-06; C07H021-04; C12N009-12
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 15 OF 126 USPATFULL on STN
 AN 2002:164694 USPATFULL
 TI Screening assays for agonists and antagonists of receptor activator of
 NF-kappa B
 IN Dougall, William C., Seattle, WA, UNITED STATES
 PI US 2002086312 A1 20020704
 AI US 2001-957944 A1 20010920 (9)
 PRAI US 2000-235157P 20000922 (60)
 DT Utility
 FS APPLICATION
 LN.CNT 3029
 INCL INCLM: 435/006.000
 INCLS: 435/007.210
 NCL NCLM: 435/006.000
 NCLS: 435/007.210
 IC [7]
 ICM: C12Q001-68
 ICS: G01N033-567
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 16 OF 126 USPATFULL on STN
 AN 2002:164405 USPATFULL
 TI Methods and compositions of matter concerning APRIL/G70, BCMA,
 BLYS/AGP-3, and TACI
 IN Theill, Lars Eyde, Thousand Oaks, CA, UNITED STATES
 Yu, Gang, Thousand Oaks, CA, UNITED STATES
 PI US 2002086018 A1 20020704
 AI US 2001-855158 A1 20010514 (9)
 PRAI US 2000-204039P 20000512 (60)
 US 2000-214591P 20000627 (60)
 DT Utility
 FS APPLICATION
 LN.CNT 1973
 INCL INCLM: 424/146.100
 INCLS: 424/153.100
 NCL NCLM: 424/146.100
 NCLS: 424/153.100
 IC [7]
 ICM: A61K039-395
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 17 OF 126 BIOTECHNO COPYRIGHT 2004 Elsevier Science B.V. on STN
 DUPLICATE
 AN 2002:34223904 BIOTECHNO
 TI Antagonistic selective binding agents of ***osteoprotegerin***
 binding ***protein***
 SO Expert Opinion on Therapeutic Patents, (2002), 12/3 (469-470), 5
 reference(s)
 CODEN: EOTPEG ISSN: 1354-3776
 DT Journal; Article
 CY United Kingdom
 LA English
 SL English

L3 ANSWER 18 OF 126 BIOSIS COPYRIGHT (c) 2004 The Thomson Corporation. on
 STN DUPLICATE 6
 AN 2002:225630 BIOSIS

TI Methods of use for osetoprotegerin binding protein receptors.
AU Boyle, William J. [Inventor]
CS ASSIGNEE: Amgen Inc.
PI US 6316408 November 13, 2001
SO Official Gazette of the United States Patent and Trademark Office Patents,
(Nov. 13, 2001) Vol. 1252, No. 2. [http://www.uspto.gov/web/menu/patdata.ht](http://www.uspto.gov/web/menu/patdata.html)
ml. e-file.
CODEN: OGUPE7. ISSN: 0098-1133.
DT Patent
LA English
ED Entered STN: 3 Apr 2002
Last Updated on STN: 3 Apr 2002

L3 ANSWER 19 OF 126 BIOTECHDS COPYRIGHT 2004 THOMSON DERWENT/ISI on STN
DUPLICATE 7
AN 2002-00826 BIOTECHDS
TI Antibodies that bind antagonistically to osteoprotein binding, useful for
treating osteoporosis, metastasis of cancer to bone, rheumatoid arthritis,
hypercalcemia of malignancy and steroid osteoporosis;
monoclonal antibody and humanized antibody, vector expression in CHO
cell
AU Deshpande R V; Hitz A; Boyle W J; Sullivan J K
PA Amgen
LO Thousand Oaks, CA, USA.
PI WO 2001062932 30 Aug 2001
AI WO 2001-US5973 23 Feb 2001
PRAI US 2001-791153 22 Mar 2001; US 2000-511139 23 Feb 2000
DT Patent
LA English
OS WPI: 2001-557706 [62]

L3 ANSWER 20 OF 126 USPATFULL on STN
AN 2001:14213 USPATFULL
TI Method for diagnosing and treating chronic pelvic pain syndrome
IN Alexander, Richard B., Ellicott City, MD, United States
Ponniah, Sathibalan, Ellicott City, MD, United States
PA University of Maryland, Baltimore, Baltimore, MD, United States (U.S.
corporation)
PI US 6180355 B1 20010130
AI US 1999-306927 19990507 (9)
PRAI US 1998-84668P 19980507 (60)
DT Utility
FS Granted
LN.CNT 3501
INCL INCLM: 435/007.100
INCLS: 435/007.800
NCL NCLM: 435/007.100
NCLS: 435/007.800
IC [7]
ICM: G01N033-50
ICS: G01N033-53
EXF 435/7.1; 435/7.8; 435/7.92; 435/7.94; 424/1.41; 424/145.1; 424/158.1;
436/501; 436/86; 436/87
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 21 OF 126 BIOSIS COPYRIGHT (c) 2004 The Thomson Corporation. on
STN DUPLICATE 8
AN 1999:71302 BIOSIS
DN PREV199900071302
TI ***Osteoprotegerin*** ***binding*** ***proteins***
AU Boyle, W. J. [Inventor]
CS Moorpark, Calif., USA
ASSIGNEE: AMGEN INC.
PI US 5843678 Dec. 1, 1998
SO Official Gazette of the United States Patent and Trademark Office Patents,
(Dec. 1, 1998) Vol. 1217, No. 1, pp. 472. print.
CODEN: OGUPE7. ISSN: 0098-1133.
DT Patent
LA English
ED Entered STN: 1 Mar 1999
Last Updated on STN: 1 Mar 1999

L3 ANSWER 22 OF 126 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:712352 CAPLUS
DN 129:328897

for use in the treatment of bone loss
 IN Boyle, William J.
 PA Amgen Inc., USA
 SO PCT Int. Appl., 108 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9846751	A1	19981022	WO 1998-US7584	19980415
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	US 5843678	A	19981201	US 1997-842842	19970416
	US 6316408	B1	20011113	US 1998-52521	19980330
	AU 9871205	A1	19981111	AU 1998-71205	19980415
	AU 743257	B2	20020124		
	EP 975754	A1	20000202	EP 1998-918244	19980415
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	BR 9808545	A	20000523	BR 1998-8545	19980415
	EE 9900611	A	20000815	EE 1999-611	19980415
	JP 2001526532	T2	20011218	JP 1998-544257	19980415
	NZ 500253	A	20020927	NZ 1998-500253	19980415
	ZA 9803189	A	19981016	ZA 1998-3189	19980416
	US 2003104485	A1	20030605	US 1998-79569	19980514
	MX 9909387	A	20000630	MX 1999-9387	19991013
	NO 9905044	A	19991215	NO 1999-5044	19991015
PRAI	US 1997-842842	A	19970416		
	US 1997-880855	A2	19970623		
	US 1998-52521	A	19980330		
	WO 1998-US7584	W	19980415		

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 23 OF 126 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
 AN AAW83201 peptide DGENE
 TI Nucleic acid encoding osteoprotegrin binding protein - useful for, e.g. treating bone diseases by modulating osteoclast differentiation and for diagnosis
 IN Boyle W J
 PA (AMGE-N) AMGEN INC.
 PI WO 9846751 A1 19981022 47p
 AI WO 1998-US7584 19980415
 PRAI US 1998-52521 19980330
 US 1997-842842 19970416
 US 1997-880855 19970623
 DT Patent
 LA English
 OS 1998-594578 [50]
 DESC Murine osteoclast differentiation and activation receptor peptide.

L3 ANSWER 24 OF 126 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
 AN AAW83200 Protein DGENE
 TI Nucleic acid encoding osteoprotegrin binding protein - useful for, e.g. treating bone diseases by modulating osteoclast differentiation and for diagnosis
 IN Boyle W J
 PA (AMGE-N) AMGEN INC.
 PI WO 9846751 A1 19981022 47p
 AI WO 1998-US7584 19980415
 PRAI US 1998-52521 19980330
 US 1997-842842 19970416
 US 1997-880855 19970623
 DT Patent
 LA English
 OS 1998-594578 [50]
 CR N-PSDB: AAV70304
 DESC Murine osteoclast differentiation and activation receptor.

L3 ANSWER 25 OF 126 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
 AN AAW83199 peptide DGENE
 TI Nucleic acid encoding osteoprotegrin binding protein - useful for, e.g.
 treating bone diseases by modulating osteoclast differentiation and for
 diagnosis
 IN Boyle W J
 PA (AMGE-N) AMGEN INC.
 PI WO 9846751 A1 19981022 47p
 AI WO 1998-US7584 19980415
 PRAI US 1998-52521 19980330
 US 1997-842842 19970416
 US 1997-880855 19970623
 DT Patent
 LA English
 OS 1998-594578 [50]
 DESC Murine ***osteoprotegerin*** ***binding*** ***protein*** EF
 loop-Cys peptide.

L3 ANSWER 26 OF 126 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
 AN AAW83198 peptide DGENE
 TI Nucleic acid encoding osteoprotegrin binding protein - useful for, e.g.
 treating bone diseases by modulating osteoclast differentiation and for
 diagnosis
 IN Boyle W J
 PA (AMGE-N) AMGEN INC.
 PI WO 9846751 A1 19981022 47p
 AI WO 1998-US7584 19980415
 PRAI US 1998-52521 19980330
 US 1997-842842 19970416
 US 1997-880855 19970623
 DT Patent
 LA English
 OS 1998-594578 [50]
 DESC Murine ***osteoprotegerin*** ***binding*** ***protein*** EF
 loop peptide.

L3 ANSWER 27 OF 126 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
 AN AAW83197 peptide DGENE
 TI Nucleic acid encoding osteoprotegrin binding protein - useful for, e.g.
 treating bone diseases by modulating osteoclast differentiation and for
 diagnosis
 IN Boyle W J
 PA (AMGE-N) AMGEN INC.
 PI WO 9846751 A1 19981022 47p
 AI WO 1998-US7584 19980415
 PRAI US 1998-52521 19980330
 US 1997-842842 19970416
 US 1997-880855 19970623
 DT Patent
 LA English
 OS 1998-594578 [50]
 DESC Murine ***osteoprotegerin*** ***binding*** ***protein*** BB'
 loop-Cys peptide.

L3 ANSWER 28 OF 126 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
 AN AAW83196 peptide DGENE
 TI Nucleic acid encoding osteoprotegrin binding protein - useful for, e.g.
 treating bone diseases by modulating osteoclast differentiation and for
 diagnosis
 IN Boyle W J
 PA (AMGE-N) AMGEN INC.
 PI WO 9846751 A1 19981022 47p
 AI WO 1998-US7584 19980415
 PRAI US 1998-52521 19980330
 US 1997-842842 19970416
 US 1997-880855 19970623
 DT Patent
 LA English
 OS 1998-594578 [50]
 DESC Murine ***osteoprotegerin*** ***binding*** ***protein*** BB'
 loop peptide.

L3 ANSWER 29 OF 126 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
 AN AAW83195 Protein DGENE
 TI Nucleic acid encoding osteoprotegrin binding protein - useful for, e.g.

diagnosis
 IN Boyle W J
 PA (AMGE-N) AMGEN INC.
 PI WO 9846751 A1 19981022 47p
 AI WO 1998-US7584 19980415
 PRAI US 1998-52521 19980330
 US 1997-842842 19970416
 US 1997-880855 19970623
 DT Patent
 LA English
 OS 1998-594578 [50]
 CR N-PSDB: AAV70285
 DESC Human ***osteoprotegerin*** ***binding*** ***protein*** from
 the pcDNA/huOPGbp1.insert.

L3 ANSWER 30 OF 126 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
 AN AAW83194 Protein DGENE
 TI Nucleic acid encoding osteoprotegrin binding protein - useful for, e.g.
 treating bone diseases by modulating osteoclast differentiation and for
 diagnosis
 IN Boyle W J
 PA (AMGE-N) AMGEN INC.
 PI WO 9846751 A1 19981022 47p
 AI WO 1998-US7584 19980415
 PRAI US 1998-52521 19980330
 US 1997-842842 19970416
 US 1997-880855 19970623
 DT Patent
 LA English
 OS 1998-594578 [50]
 CR N-PSDB: AAV70284
 DESC Human ***osteoprotegerin*** ***binding*** ***protein*** from
 the 32D-F3 ins.

L3 ANSWER 31 OF 126 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
 AN AAV70306 DNA DGENE
 TI Nucleic acid encoding osteoprotegrin binding protein - useful for, e.g.
 treating bone diseases by modulating osteoclast differentiation and for
 diagnosis
 IN Boyle W J
 PA (AMGE-N) AMGEN INC.
 PI WO 9846751 A1 19981022 47p
 AI WO 1998-US7584 19980415
 PRAI US 1998-52521 19980330
 US 1997-842842 19970416
 US 1997-880855 19970623
 DT Patent
 LA English
 OS 1998-594578 [50]
 DESC Murine osteoclast differentiation and activation receptor PCR primer #2.

L3 ANSWER 32 OF 126 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
 AN AAV70305 DNA DGENE
 TI Nucleic acid encoding osteoprotegrin binding protein - useful for, e.g.
 treating bone diseases by modulating osteoclast differentiation and for
 diagnosis
 IN Boyle W J
 PA (AMGE-N) AMGEN INC.
 PI WO 9846751 A1 19981022 47p
 AI WO 1998-US7584 19980415
 PRAI US 1998-52521 19980330
 US 1997-842842 19970416
 US 1997-880855 19970623
 DT Patent
 LA English
 OS 1998-594578 [50]
 DESC Murine osteoclast differentiation and activation receptor PCR primer #1.

L3 ANSWER 33 OF 126 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
 AN AAV70304 DNA DGENE
 TI Nucleic acid encoding osteoprotegrin binding protein - useful for, e.g.
 treating bone diseases by modulating osteoclast differentiation and for
 diagnosis
 IN Boyle W J
 PA (AMGE-N) AMGEN INC.

AI	WO 1998-US7584	19980415			
PRAI	US 1998-52521	19980330			
	US 1997-842842	19970416			
	US 1997-880855	19970623			
DT	Patent				
LA	English				
OS	1998-594578 [50]				
CR	P-PSDB: AAW83200				
DESC	Murine osteoclast differentiation and activation receptor encoding DNA.				
L3	ANSWER 34 OF 126 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN				
AN	AAV70303 DNA	DGENE			
TI	Nucleic acid encoding osteoprotegrin binding protein - useful for, e.g. treating bone diseases by modulating osteoclast differentiation and for diagnosis				
IN	Boyle W J				
PA	(AMGE-N) AMGEN INC.				
PI	WO 9846751	A1 19981022	47p		
AI	WO 1998-US7584	19980415			
PRAI	US 1998-52521	19980330			
	US 1997-842842	19970416			
	US 1997-880855	19970623			
DT	Patent				
LA	English				
OS	1998-594578 [50]				
DESC	Murine ***osteoprotegerin***	***binding***	***protein***	PCR	
	primer 1616-42.				
L3	ANSWER 35 OF 126 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN				
AN	AAV70302 DNA	DGENE			
TI	Nucleic acid encoding osteoprotegrin binding protein - useful for, e.g. treating bone diseases by modulating osteoclast differentiation and for diagnosis				
IN	Boyle W J				
PA	(AMGE-N) AMGEN INC.				
PI	WO 9846751	A1 19981022	47p		
AI	WO 1998-US7584	19980415			
PRAI	US 1998-52521	19980330			
	US 1997-842842	19970416			
	US 1997-880855	19970623			
DT	Patent				
LA	English				
OS	1998-594578 [50]				
DESC	Murine ***osteoprotegerin***	***binding***	***protein***	PCR	
	primer 1616-41.				
L3	ANSWER 36 OF 126 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN				
AN	AAV70301 DNA	DGENE			
TI	Nucleic acid encoding osteoprotegrin binding protein - useful for, e.g. treating bone diseases by modulating osteoclast differentiation and for diagnosis				
IN	Boyle W J				
PA	(AMGE-N) AMGEN INC.				
PI	WO 9846751	A1 19981022	47p		
AI	WO 1998-US7584	19980415			
PRAI	US 1998-52521	19980330			
	US 1997-842842	19970416			
	US 1997-880855	19970623			
DT	Patent				
LA	English				
OS	1998-594578 [50]				
DESC	Murine ***osteoprotegerin***	***binding***	***protein***	PCR	
	primer 1616-44.				
L3	ANSWER 37 OF 126 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN				
AN	AAV70300 DNA	DGENE			
TI	Nucleic acid encoding osteoprotegrin binding protein - useful for, e.g. treating bone diseases by modulating osteoclast differentiation and for diagnosis				
IN	Boyle W J				
PA	(AMGE-N) AMGEN INC.				
PI	WO 9846751	A1 19981022	47p		
AI	WO 1998-US7584	19980415			
PRAI	US 1998-52521	19980330			
	US 1997-842842	19970416			

D'I Patent
 LA English
 OS 1998-594578 [50]
 DESC Murine ***osteoprotegerin*** ***binding*** ***protein*** PCR
 primer 1602-59.

L3 ANSWER 38 OF 126 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
 AN AAV70299 DNA DGENE
 TI Nucleic acid encoding osteoprotegrin binding protein - useful for, e.g.
 treating bone diseases by modulating osteoclast differentiation and for
 diagnosis
 IN Boyle W J
 PA (AMGE-N) AMGEN INC.
 PI WO 9846751 A1 19981022 47p
 AI WO 1998-US7584 19980415
 PRAI US 1998-52521 19980330
 US 1997-842842 19970416
 US 1997-880855 19970623

DT Patent
 LA English
 OS 1998-594578 [50]
 DESC Murine ***osteoprotegerin*** ***binding*** ***protein*** PCR
 primer 1602-61.

L3 ANSWER 39 OF 126 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
 AN AAV70298 DNA DGENE
 TI Nucleic acid encoding osteoprotegrin binding protein - useful for, e.g.
 treating bone diseases by modulating osteoclast differentiation and for
 diagnosis
 IN Boyle W J
 PA (AMGE-N) AMGEN INC.
 PI WO 9846751 A1 19981022 47p
 AI WO 1998-US7584 19980415
 PRAI US 1998-52521 19980330
 US 1997-842842 19970416
 US 1997-880855 19970623

DT Patent
 LA English
 OS 1998-594578 [50]
 DESC Murine ***osteoprotegerin*** ***binding*** ***protein*** PCR
 primer 1581-74.

L3 ANSWER 40 OF 126 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
 AN AAV70297 DNA DGENE
 TI Nucleic acid encoding osteoprotegrin binding protein - useful for, e.g.
 treating bone diseases by modulating osteoclast differentiation and for
 diagnosis
 IN Boyle W J
 PA (AMGE-N) AMGEN INC.
 PI WO 9846751 A1 19981022 47p
 AI WO 1998-US7584 19980415
 PRAI US 1998-52521 19980330
 US 1997-842842 19970416
 US 1997-880855 19970623

DT Patent
 LA English
 OS 1998-594578 [50]
 DESC Murine ***osteoprotegerin*** ***binding*** ***protein*** PCR
 primer 1581-75.

L3 ANSWER 41 OF 126 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
 AN AAV70296 DNA DGENE
 TI Nucleic acid encoding osteoprotegrin binding protein - useful for, e.g.
 treating bone diseases by modulating osteoclast differentiation and for
 diagnosis
 IN Boyle W J
 PA (AMGE-N) AMGEN INC.
 PI WO 9846751 A1 19981022 47p
 AI WO 1998-US7584 19980415
 PRAI US 1998-52521 19980330
 US 1997-842842 19970416
 US 1997-880855 19970623

DT Patent
 LA English
 OS 1998-594578 [50]

primer 1581-73.

L3 ANSWER 42 OF 126 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
AN AAV70295 DNA DGENE
TI Nucleic acid encoding osteoprotegrin binding protein - useful for, e.g.
treating bone diseases by modulating osteoclast differentiation and for
diagnosis
IN Boyle W J
PA (AMGE-N) AMGEN INC.
PI WO 9846751 A1 19981022 47p
AI WO 1998-US7584 19980415
PRAI US 1998-52521 19980330
US 1997-842842 19970416
US 1997-880855 19970623
DT Patent
LA English
OS 1998-594578 [50]
DESC Murine ***osteoprotegerin*** ***binding*** ***protein*** PCR
primer 1619-86.

L3 ANSWER 43 OF 126 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
AN AAV70294 DNA DGENE
TI Nucleic acid encoding osteoprotegrin binding protein - useful for, e.g.
treating bone diseases by modulating osteoclast differentiation and for
diagnosis
IN Boyle W J
PA (AMGE-N) AMGEN INC.
PI WO 9846751 A1 19981022 47p
AI WO 1998-US7584 19980415
PRAI US 1998-52521 19980330
US 1997-842842 19970416
US 1997-880855 19970623
DT Patent
LA English
OS 1998-594578 [50]
DESC Murine ***osteoprotegerin*** ***binding*** ***protein*** PCR
primer 1600-98.

L3 ANSWER 44 OF 126 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
AN AAV70293 DNA DGENE
TI Nucleic acid encoding osteoprotegrin binding protein - useful for, e.g.
treating bone diseases by modulating osteoclast differentiation and for
diagnosis
IN Boyle W J
PA (AMGE-N) AMGEN INC.
PI WO 9846751 A1 19981022 47p
AI WO 1998-US7584 19980415
PRAI US 1998-52521 19980330
US 1997-842842 19970416
US 1997-880855 19970623
DT Patent
LA English
OS 1998-594578 [50]
DESC Murine ***osteoprotegerin*** ***binding*** ***protein*** PCR
primer 1591-92.

L3 ANSWER 45 OF 126 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
AN AAV70292 DNA DGENE
TI Nucleic acid encoding osteoprotegrin binding protein - useful for, e.g.
treating bone diseases by modulating osteoclast differentiation and for
diagnosis
IN Boyle W J
PA (AMGE-N) AMGEN INC.
PI WO 9846751 A1 19981022 47p
AI WO 1998-US7584 19980415
PRAI US 1998-52521 19980330
US 1997-842842 19970416
US 1997-880855 19970623
DT Patent
LA English
OS 1998-594578 [50]
DESC Murine ***osteoprotegerin*** ***binding*** ***protein*** PCR
primer 1591-91.

L3 ANSWER 46 OF 126 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN

T1 Nucleic acid encoding osteoprotegrin binding protein - useful for, e.g. treating bone diseases by modulating osteoclast differentiation and for diagnosis
 IN Boyle W J
 PA (AMGE-N) AMGEN INC.
 PI WO 9846751 A1 19981022 47p
 AI WO 1998-US7584 19980415
 PRAI US 1998-52521 19980330
 US 1997-842842 19970416
 US 1997-880855 19970623
 DT Patent
 LA English
 OS 1998-594578 [50]
 DESC Murine ***osteoprotegerin*** ***binding*** ***protein*** PCR primer 1591-94.

L3 ANSWER 47 OF 126 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
 AN AAV70290 DNA DGENE
 TI Nucleic acid encoding osteoprotegrin binding protein - useful for, e.g. treating bone diseases by modulating osteoclast differentiation and for diagnosis
 IN Boyle W J
 PA (AMGE-N) AMGEN INC.
 PI WO 9846751 A1 19981022 47p
 AI WO 1998-US7584 19980415
 PRAI US 1998-52521 19980330
 US 1997-842842 19970416
 US 1997-880855 19970623
 DT Patent
 LA English
 OS 1998-594578 [50]
 DESC Murine ***osteoprotegerin*** ***binding*** ***protein*** PCR primer 1591-93.

L3 ANSWER 48 OF 126 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
 AN AAV70289 DNA DGENE
 TI Nucleic acid encoding osteoprotegrin binding protein - useful for, e.g. treating bone diseases by modulating osteoclast differentiation and for diagnosis
 IN Boyle W J
 PA (AMGE-N) AMGEN INC.
 PI WO 9846751 A1 19981022 47p
 AI WO 1998-US7584 19980415
 PRAI US 1998-52521 19980330
 US 1997-842842 19970416
 US 1997-880855 19970623
 DT Patent
 LA English
 OS 1998-594578 [50]
 DESC Murine ***osteoprotegerin*** ***binding*** ***protein*** PCR primer 1591-95.

L3 ANSWER 49 OF 126 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
 AN AAV70288 DNA DGENE
 TI Nucleic acid encoding osteoprotegrin binding protein - useful for, e.g. treating bone diseases by modulating osteoclast differentiation and for diagnosis
 IN Boyle W J
 PA (AMGE-N) AMGEN INC.
 PI WO 9846751 A1 19981022 47p
 AI WO 1998-US7584 19980415
 PRAI US 1998-52521 19980330
 US 1997-842842 19970416
 US 1997-880855 19970623
 DT Patent
 LA English
 OS 1998-594578 [50]
 DESC Murine ***osteoprotegerin*** ***binding*** ***protein*** PCR primer 1591-90.

L3 ANSWER 50 OF 126 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
 AN AAV70287 DNA DGENE
 TI Nucleic acid encoding osteoprotegrin binding protein - useful for, e.g. treating bone diseases by modulating osteoclast differentiation and for diagnosis

PA (AMGE-N) AMGEN INC.
 PI WO 9846751 A1 19981022 47p
 AI WO 1998-US7584 19980415
 PRAI US 1998-52521 19980330
 US 1997-842842 19970416
 US 1997-880855 19970623
 DT Patent
 LA English
 OS 1998-594578 [50]
 DESC Murine ***osteoprotegerin*** ***binding*** ***protein*** PCR
 primer 1581-76.

L3 ANSWER 51 OF 126 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
 AN AAV70286 DNA DGENE
 TI Nucleic acid encoding osteoprotegrin binding protein - useful for, e.g.
 treating bone diseases by modulating osteoclast differentiation and for
 diagnosis

IN Boyle W J
 PA (AMGE-N) AMGEN INC.
 PI WO 9846751 A1 19981022 47p
 AI WO 1998-US7584 19980415
 PRAI US 1998-52521 19980330
 US 1997-842842 19970416
 US 1997-880855 19970623
 DT Patent
 LA English
 OS 1998-594578 [50]
 DESC Murine ***osteoprotegerin*** ***binding*** ***protein*** PCR
 primer 1581-72.

L3 ANSWER 52 OF 126 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
 AN AAV70285 DNA DGENE
 TI Nucleic acid encoding osteoprotegrin binding protein - useful for, e.g.
 treating bone diseases by modulating osteoclast differentiation and for
 diagnosis

IN Boyle W J
 PA (AMGE-N) AMGEN INC.
 PI WO 9846751 A1 19981022 47p
 AI WO 1998-US7584 19980415
 PRAI US 1998-52521 19980330
 US 1997-842842 19970416
 US 1997-880855 19970623
 DT Patent
 LA English
 OS 1998-594578 [50]
 CR P-PSDB: AAW83195
 DESC Human ***osteoprotegerin*** ***binding*** ***protein*** from
 the pcDNA/huOPGbp1.1insert.

L3 ANSWER 53 OF 126 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
 AN AAV70284 DNA DGENE
 TI Nucleic acid encoding osteoprotegrin binding protein - useful for, e.g.
 treating bone diseases by modulating osteoclast differentiation and for
 diagnosis

IN Boyle W J
 PA (AMGE-N) AMGEN INC.
 PI WO 9846751 A1 19981022 47p
 AI WO 1998-US7584 19980415
 PRAI US 1998-52521 19980330
 US 1997-842842 19970416
 US 1997-880855 19970623
 DT Patent
 LA English
 OS 1998-594578 [50]
 CR P-PSDB: AAW83194
 DESC Human ***osteoprotegerin*** ***binding*** ***protein***
 encoding DNA from the 32D-F3 ins.

L3 ANSWER 54 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232668 GenBank (R)
 GenBank ACC. NO. (GBN): AX232668
 GenBank VERSION (VER): AX232668.1 GI:15592662
 CAS REGISTRY NO. (RN): 357143-84-1
 SEQUENCE LENGTH (SQL): 23

DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 154 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 4 a 9 c 5 g 5 t
 REFERENCE: 1 (bases 1 to 23)
 AUTHOR (AU): Deshpande,R.V.; Hitz,A.; Boyle,W.J.; Sullivan,J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 154 30-AUG-2001; Amgen Inc. (US)

Feature Key	Location	Qualifier
source	1..23	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):
 1 ccgggcgcgc cttattaaca ctc

L3 ANSWER 55 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232667 GenBank (R)
 GenBank ACC. NO. (GBN): AX232667
 GenBank VERSION (VER): AX232667.1 GI:15592661
 CAS REGISTRY NO. (RN): 357143-83-0
 SEQUENCE LENGTH (SQL): 51
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 153 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 8 a 16 c 20 g 7 t
 REFERENCE: 1 (bases 1 to 51)
 AUTHOR (AU): Deshpande,R.V.; Hitz,A.; Boyle,W.J.; Sullivan,J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 153 30-AUG-2001; Amgen Inc. (US)

Feature Key	Location	Qualifier
source	1..51	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):
 1 ccggtcaaca cactacgtac gtgtgcggcg gcgcgggcgt tcggccaagg g

L3 ANSWER 56 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232666 GenBank (R)
 GenBank ACC. NO. (GBN): AX232666
 GenBank VERSION (VER): AX232666.1 GI:15592660
 CAS REGISTRY NO. (RN): 382255-02-9
 SEQUENCE LENGTH (SQL): 48
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 152 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 6 a 13 c 16 g 13 t
 REFERENCE: 1 (bases 1 to 48)
 AUTHOR (AU): Deshpande,R.V.; Hitz,A.; Boyle,W.J.; Sullivan,J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 152 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..48	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):

1 ccgctcagct cctggggctc ctgctattgt ggttgagagg tgccagat

L3 ANSWER 57 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232665 GenBank (R)

GenBank ACC. NO. (GBN): AX232665

GenBank VERSION (VER): AX232665.1 GI:15592659

CAS REGISTRY NO. (RN): 357143-82-9

SEQUENCE LENGTH (SQL): 40

MOLECULE TYPE (CI): DNA; linear

DIVISION CODE (CI): Patent

DATE (DATE): 11 Sep 2001

DEFINITION (DEF): Sequence 151 from Patent WO0162932.

SOURCE: synthetic construct.

ORGANISM (ORGN): synthetic construct
artificial sequence

NUCLEIC ACID COUNT (NA): 7 a 7 c 17 g 9 t

REFERENCE: 1 (bases 1 to 40)

AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.

TITLE (TI): Antagonistic selective binding agents of
osteoprotegerin ***binding***
protein

JOURNAL (SO): Patent: WO 0162932-A 151 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..40	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):

1 gtgggttgaga ggtgccagat gtcagggtcca gctgggtgcag

L3 ANSWER 58 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232664 GenBank (R)

GenBank ACC. NO. (GBN): AX232664

GenBank VERSION (VER): AX232664.1 GI:15592658

CAS REGISTRY NO. (RN): 357143-81-8

SEQUENCE LENGTH (SQL): 53

MOLECULE TYPE (CI): DNA; linear

DIVISION CODE (CI): Patent

DATE (DATE): 11 Sep 2001

DEFINITION (DEF): Sequence 150 from Patent WO0162932.

SOURCE: synthetic construct.

ORGANISM (ORGN): synthetic construct
artificial sequence

NUCLEIC ACID COUNT (NA): 12 a 8 c 17 g 16 t

REFERENCE: 1 (bases 1 to 53)

AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.

TITLE (TI): Antagonistic selective binding agents of
osteoprotegerin ***binding***
protein

JOURNAL (SO): Patent: WO 0162932-A 150 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..53	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):

1 gtgtattact gtgcgagaga tgccgcagct atggttcggg gaattattat agc

L3 ANSWER 59 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232663 GenBank (R)

GenBank ACC. NO. (GBN): AX232663

CAS REGISTRY NO. (RN): 357143-80-7
 SEQUENCE LENGTH (SQL): 53
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 149 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 12 a 8 c 16 g 17 t
 REFERENCE: 1 (bases 1 to 53)
 AUTHOR (AU): Deshpande,R.V.; Hitz,A.; Boyle,W.J.; Sullivan,J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 149 30-AUG-2001; Amgen Inc. (US)

Feature Key	Location	Qualifier
source	1..53	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):
 1 gtgtattact gtgcgagaga ttccgcagct atggttcggg gaattattat agc

L3 ANSWER 60 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232662 GenBank (R)
 GenBank ACC. NO. (GBN): AX232662
 GenBank VERSION (VER): AX232662.1 GI:15592656
 CAS REGISTRY NO. (RN): 357143-79-4
 SEQUENCE LENGTH (SQL): 53
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 148 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 12 a 8 c 16 g 17 t
 REFERENCE: 1 (bases 1 to 53)
 AUTHOR (AU): Deshpande,R.V.; Hitz,A.; Boyle,W.J.; Sullivan,J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 148 30-AUG-2001; Amgen Inc. (US)

Feature Key	Location	Qualifier
source	1..53	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):
 1 gtgtattact gtgcgagaga tgcctcagct atggttcggg gaattattat agc

L3 ANSWER 61 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232661 GenBank (R)
 GenBank ACC. NO. (GBN): AX232661
 GenBank VERSION (VER): AX232661.1 GI:15592655
 CAS REGISTRY NO. (RN): 357143-78-3
 SEQUENCE LENGTH (SQL): 48
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 147 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 12 a 6 c 15 g 15 t
 REFERENCE: 1 (bases 1 to 48)
 AUTHOR (AU): Deshpande,R.V.; Hitz,A.; Boyle,W.J.; Sullivan,J.K.
 TITLE (TI): Antagonistic selective binding agents of

protein

JOURNAL (SO): Patent: WO 0162932-A 147 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..48	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):

1 gtgtattact gtgcgagaga tgccgcaaat atggttcggg gaattatt

L3 ANSWER 62 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232660 GenBank (R)

GenBank ACC. NO. (GBN): AX232660

GenBank VERSION (VER): AX232660.1 GI:15592654

CAS REGISTRY NO. (RN): 382255-01-8

SEQUENCE LENGTH (SQL): 30

MOLECULE TYPE (CI): DNA; linear

DIVISION CODE (CI): Patent

DATE (DATE): 11 Sep 2001

DEFINITION (DEF): Sequence 146 from Patent WO0162932.

SOURCE: synthetic construct.

ORGANISM (ORGN): synthetic construct

artificial sequence

NUCLEIC ACID COUNT (NA): 7 a 5 c 14 g 4 t

REFERENCE: 1 (bases 1 to 30)

AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.

TITLE (TI): Antagonistic selective binding agents of

osteoprotegerin

binding

protein

JOURNAL (SO): Patent: WO 0162932-A 146 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..30	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):

1 gtggaggcac tagagacggt gaccagggtg

L3 ANSWER 63 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232659 GenBank (R)

GenBank ACC. NO. (GBN): AX232659

GenBank VERSION (VER): AX232659.1 GI:15592653

CAS REGISTRY NO. (RN): 357143-77-2

SEQUENCE LENGTH (SQL): 36

MOLECULE TYPE (CI): DNA; linear

DIVISION CODE (CI): Patent

DATE (DATE): 11 Sep 2001

DEFINITION (DEF): Sequence 145 from Patent WO0162932.

SOURCE: synthetic construct.

ORGANISM (ORGN): synthetic construct

artificial sequence

NUCLEIC ACID COUNT (NA): 7 a 13 c 8 g 8 t

REFERENCE: 1 (bases 1 to 36)

AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.

TITLE (TI): Antagonistic selective binding agents of

osteoprotegerin

binding

protein

JOURNAL (SO): Patent: WO 0162932-A 145 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..36	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):

1 cacagccgtg tcttcagatc tcagactgcg cagctc

L3 ANSWER 64 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232658 GenBank (R)
 GenBank ACC. NO. (GBN): AX232658
 GenBank VERSION (VER): AX232658.1 GI:15592652
 CAS REGISTRY NO. (RN): 357143-76-1
 SEQUENCE LENGTH (SQL): 52
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 144 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 12 a 17 c 15 g 8 t
 REFERENCE: 1 (bases 1 to 52)
 AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 144 30-AUG-2001; Amgen Inc. (US)

Feature Key	Location	Qualifier
source	1..52	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):
 1 cagcagaagc ttagaccacc atggacatga gggccccgc tcagctcctg gg

L3 ANSWER 65 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232657 GenBank (R)
 GenBank ACC. NO. (GBN): AX232657
 GenBank VERSION (VER): AX232657.1 GI:15592651
 CAS REGISTRY NO. (RN): 382255-00-7
 SEQUENCE LENGTH (SQL): 42
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 143 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 11 a 7 c 13 g 11 t
 REFERENCE: 1 (bases 1 to 42)
 AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 143 30-AUG-2001; Amgen Inc. (US)

Feature Key	Location	Qualifier
source	1..42	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):
 1 agtctgagat ctgaagacac ggctgtgtat tactgtgcga ga

L3 ANSWER 66 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232656 GenBank (R)
 GenBank ACC. NO. (GBN): AX232656
 GenBank VERSION (VER): AX232656.1 GI:15592650
 CAS REGISTRY NO. (RN): 357143-75-0
 SEQUENCE LENGTH (SQL): 41
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 142 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 14 a 13 c 5 g 9 t

AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 142 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..41	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):
 1 aataattccc cgaaccatca cattgaggaa tctctcgcac a

L3 ANSWER 67 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232655 GenBank (R)
 GenBank ACC. NO. (GBN): AX232655
 GenBank VERSION (VER): AX232655.1 GI:15592649
 CAS REGISTRY NO. (RN): 357143-74-9
 SEQUENCE LENGTH (SQL): 41
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 141 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 12 a 13 c 6 g 10 t
 REFERENCE: 1 (bases 1 to 41)
 AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 141 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..41	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):
 1 aataattccc cgaaccatct cgttgaggaa tctctcgcac a

L3 ANSWER 68 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232654 GenBank (R)
 GenBank ACC. NO. (GBN): AX232654
 GenBank VERSION (VER): AX232654.1 GI:15592648
 CAS REGISTRY NO. (RN): 357143-73-8
 SEQUENCE LENGTH (SQL): 43
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 140 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 13 a 13 c 8 g 9 t
 REFERENCE: 1 (bases 1 to 43)
 AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 140 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..43	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):

LOCUS (LOC): AX232653 GenBank (R)
 GenBank ACC. NO. (GBN): AX232653
 GenBank VERSION (VER): AX232653.1 GI:15592647
 CAS REGISTRY NO. (RN): 357143-72-7
 SEQUENCE LENGTH (SQL): 43
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 139 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 14 a 12 c 7 g 10 t
 REFERENCE: 1 (bases 1 to 43)
 AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 139 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..43	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):
 1 aataattccc cgaaccatga tacgttgagg aatctctcgc aca

LOCUS (LOC): AX232652 GenBank (R)
 GenBank ACC. NO. (GBN): AX232652
 GenBank VERSION (VER): AX232652.1 GI:15592646
 CAS REGISTRY NO. (RN): 357143-71-6
 SEQUENCE LENGTH (SQL): 44
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 138 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 15 a 13 c 5 g 11 t
 REFERENCE: 1 (bases 1 to 44)
 AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 138 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..44	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):
 1 aataattccc cgaaccatat tcacatggaa tctctcgcac agta

LOCUS (LOC): AX232651 GenBank (R)
 GenBank ACC. NO. (GBN): AX232651
 GenBank VERSION (VER): AX232651.1 GI:15592645
 CAS REGISTRY NO. (RN): 357143-70-5
 SEQUENCE LENGTH (SQL): 44
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 137 from Patent WO0162932.
 SOURCE: synthetic construct.

artificial sequence
 NUCLEIC ACID COUNT (NA): 13 a 13 c 6 g 12 t
 REFERENCE: 1 (bases 1 to 44)
 AUTHOR (AU): Deshpande,R.V.; Hitz,A.; Boyle,W.J.; Sullivan,J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 137 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..44	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):
 1 aataattccc cgaaccatat tctcgtggaa tctctcgcac agta

L3 ANSWER 72 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232650 GenBank (R)
 GenBank ACC. NO. (GBN): AX232650
 GenBank VERSION (VER): AX232650.1 GI:15592644
 CAS REGISTRY NO. (RN): 357143-69-2
 SEQUENCE LENGTH (SQL): 46
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 136 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 14 a 13 c 8 g 11 t
 REFERENCE: 1 (bases 1 to 46)
 AUTHOR (AU): Deshpande,R.V.; Hitz,A.; Boyle,W.J.; Sullivan,J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 136 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..46	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):
 1 aataattccc cgaaccatat tgcgacgtgg aatctctcgc acagta

L3 ANSWER 73 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232649 GenBank (R)
 GenBank ACC. NO. (GBN): AX232649
 GenBank VERSION (VER): AX232649.1 GI:15592643
 CAS REGISTRY NO. (RN): 357143-68-1
 SEQUENCE LENGTH (SQL): 46
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 135 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 15 a 12 c 7 g 12 t
 REFERENCE: 1 (bases 1 to 46)
 AUTHOR (AU): Deshpande,R.V.; Hitz,A.; Boyle,W.J.; Sullivan,J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 135 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..46	/organism="synthetic construct"

SEQUENCE (SEQ):

1 aataattccc cgaaccatat tgatacgtgg aatctctcgc acagta

L3 ANSWER 74 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232648 GenBank (R)

GenBank ACC. NO. (GBN): AX232648

GenBank VERSION (VER): AX232648.1 GI:15592642

CAS REGISTRY NO. (RN): 357143-67-0

SEQUENCE LENGTH (SQL): 44

MOLECULE TYPE (CI): DNA; linear

DIVISION CODE (CI): Patent

DATE (DATE): 11 Sep 2001

DEFINITION (DEF): Sequence 134 from Patent WO0162932.

SOURCE: synthetic construct.

ORGANISM (ORGN): synthetic construct

artificial sequence

NUCLEIC ACID COUNT (NA): 15 a 13 c 4 g 12 t

REFERENCE: 1 (bases 1 to 44)

AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.

TITLE (TI): Antagonistic selective binding agents of

osteoprotegerin ***binding***

protein

JOURNAL (SO): Patent: WO 0162932-A 134 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..44	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):

1 aataattccc cgaaccatat ttgacacata tctctcgcac agta

L3 ANSWER 75 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232647 GenBank (R)

GenBank ACC. NO. (GBN): AX232647

GenBank VERSION (VER): AX232647.1 GI:15592641

CAS REGISTRY NO. (RN): 357143-66-9

SEQUENCE LENGTH (SQL): 44

MOLECULE TYPE (CI): DNA; linear

DIVISION CODE (CI): Patent

DATE (DATE): 11 Sep 2001

DEFINITION (DEF): Sequence 133 from Patent WO0162932.

SOURCE: synthetic construct.

ORGANISM (ORGN): synthetic construct

artificial sequence

NUCLEIC ACID COUNT (NA): 13 a 13 c 5 g 13 t

REFERENCE: 1 (bases 1 to 44)

AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.

TITLE (TI): Antagonistic selective binding agents of

osteoprotegerin ***binding***

protein

JOURNAL (SO): Patent: WO 0162932-A 133 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..44	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):

1 aataattccc cgaaccatat ttgactcgta tctctcgcac agta

L3 ANSWER 76 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232646 GenBank (R)

GenBank ACC. NO. (GBN): AX232646

GenBank VERSION (VER): AX232646.1 GI:15592640

CAS REGISTRY NO. (RN): 357143-65-8

SEQUENCE LENGTH (SQL): 46

MOLECULE TYPE (CI): DNA; linear

DIVISION CODE (CI): Patent

DEFINITION (DEF): Sequence 132 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 14 a 13 c 7 g 12 t
 REFERENCE: 1 (bases 1 to 46)
 AUTHOR (AU): Deshpande,R.V.; Hitz,A.; Boyle,W.J.; Sullivan,J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 132 30-AUG-2001; Amgen Inc. (US)

Feature Key	Location	Qualifier
source	1..46	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):
 1 aataattccc cgaaccatat ttgagcgacg tatctctcgc acagta

L3 ANSWER 77 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232645 GenBank (R)
 GenBank ACC. NO. (GBN): AX232645
 GenBank VERSION (VER): AX232645.1 GI:15592639
 CAS REGISTRY NO. (RN): 357143-64-7
 SEQUENCE LENGTH (SQL): 46
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 131 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 15 a 12 c 6 g 13 t
 REFERENCE: 1 (bases 1 to 46)
 AUTHOR (AU): Deshpande,R.V.; Hitz,A.; Boyle,W.J.; Sullivan,J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 131 30-AUG-2001; Amgen Inc. (US)

Feature Key	Location	Qualifier
source	1..46	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):
 1 aataattccc cgaaccatat ttgagatagc tatctctcgc acagta

L3 ANSWER 78 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232644 GenBank (R)
 GenBank ACC. NO. (GBN): AX232644
 GenBank VERSION (VER): AX232644.1 GI:15592638
 CAS REGISTRY NO. (RN): 382254-99-1
 SEQUENCE LENGTH (SQL): 36
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 130 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 14 a 8 c 5 g 9 t
 REFERENCE: 1 (bases 1 to 36)
 AUTHOR (AU): Deshpande,R.V.; Hitz,A.; Boyle,W.J.; Sullivan,J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 130 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

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=====+=====+=====
source          1..36                               /organism="synthetic construct"
                                                    /db-xref="taxon:32630"

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SEQUENCE (SEQ):

1 gtagtcaaaa tagtacgcta taataattcc ccgaac

L3 ANSWER 79 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232643 GenBank (R)
 GenBank ACC. NO. (GBN): AX232643
 GenBank VERSION (VER): AX232643.1 GI:15592637
 CAS REGISTRY NO. (RN): 382254-98-0
 SEQUENCE LENGTH (SQL): 36
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 129 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 9 a 11 c 10 g 6 t
 REFERENCE: 1 (bases 1 to 36)
 AUTHOR (AU): Deshpande,R.V.; Hitz,A.; Boyle,W.J.; Sullivan,J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 129 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..36	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):

1 cagggtgccc tggccccagt agtcaaaata gtacgc

L3 ANSWER 80 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232642 GenBank (R)
 GenBank ACC. NO. (GBN): AX232642
 GenBank VERSION (VER): AX232642.1 GI:15592636
 CAS REGISTRY NO. (RN): 357143-63-6
 SEQUENCE LENGTH (SQL): 32
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 128 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 5 a 11 c 11 g 5 t
 REFERENCE: 1 (bases 1 to 32)
 AUTHOR (AU): Deshpande,R.V.; Hitz,A.; Boyle,W.J.; Sullivan,J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 128 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..32	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):

1 cttgagacgg tgaccagggt gccctggccc ca

L3 ANSWER 81 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232641 GenBank (R)
 GenBank ACC. NO. (GBN): AX232641
 GenBank VERSION (VER): AX232641.1 GI:15592635
 CAS REGISTRY NO. (RN): 382254-97-9

MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 127 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 12 a 5 c 10 g 12 t
 REFERENCE: 1 (bases 1 to 39)
 AUTHOR (AU): Deshpande,R.V.; Hitz,A.; Boyle,W.J.; Sullivan,J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 127 30-AUG-2001; Amgen Inc. (US)

Feature Key	Location	Qualifier
source	1..39	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):
 1 agagattcct caaatatggt tcggggaatt attatagcg

L3 ANSWER 82 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232640 GenBank (R)
 GenBank ACC. NO. (GBN): AX232640
 GenBank VERSION (VER): AX232640.1 GI:15592634
 CAS REGISTRY NO. (RN): 382254-96-8
 SEQUENCE LENGTH (SQL): 33
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 126 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 9 a 5 c 8 g 11 t
 REFERENCE: 1 (bases 1 to 33)
 AUTHOR (AU): Deshpande,R.V.; Hitz,A.; Boyle,W.J.; Sullivan,J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 126 30-AUG-2001; Amgen Inc. (US)

Feature Key	Location	Qualifier
source	1..33	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):
 1 gtgtattact gtgcgagaga ttcctcaaat atg

L3 ANSWER 83 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232639 GenBank (R)
 GenBank ACC. NO. (GBN): AX232639
 GenBank VERSION (VER): AX232639.1 GI:15592633
 CAS REGISTRY NO. (RN): 357143-62-5
 SEQUENCE LENGTH (SQL): 42
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 125 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 11 a 7 c 13 g 11 t
 REFERENCE: 1 (bases 1 to 42)
 AUTHOR (AU): Deshpande,R.V.; Hitz,A.; Boyle,W.J.; Sullivan,J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..42	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):

1 agtctgagat ctgaagacac ggctgtgtat tactgtgcga ga

L3 ANSWER 84 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232638 GenBank (R)

GenBank ACC. NO. (GBN): AX232638

GenBank VERSION (VER): AX232638.1 GI:15592632

CAS REGISTRY NO. (RN): 357143-61-4

SEQUENCE LENGTH (SQL): 39

MOLECULE TYPE (CI): DNA; linear

DIVISION CODE (CI): Patent

DATE (DATE): 11 Sep 2001

DEFINITION (DEF): Sequence 124 from Patent WO0162932.

SOURCE: synthetic construct.

ORGANISM (ORGN): synthetic construct
artificial sequence

NUCLEIC ACID COUNT (NA): 9 a 12 c 11 g 7 t

REFERENCE: 1 (bases 1 to 39)

AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.

TITLE (TI): Antagonistic selective binding agents of
osteoprotegerin ***binding***
protein

JOURNAL (SO): Patent: WO 0162932-A 124 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..39	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):

1 cagggtgccc tggccccagg cgtcaaaata gtacgctat

L3 ANSWER 85 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232637 GenBank (R)

GenBank ACC. NO. (GBN): AX232637

GenBank VERSION (VER): AX232637.1 GI:15592631

CAS REGISTRY NO. (RN): 357143-60-3

SEQUENCE LENGTH (SQL): 39

MOLECULE TYPE (CI): DNA; linear

DIVISION CODE (CI): Patent

DATE (DATE): 11 Sep 2001

DEFINITION (DEF): Sequence 123 from Patent WO0162932.

SOURCE: synthetic construct.

ORGANISM (ORGN): synthetic construct
artificial sequence

NUCLEIC ACID COUNT (NA): 10 a 11 c 11 g 7 t

REFERENCE: 1 (bases 1 to 39)

AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.

TITLE (TI): Antagonistic selective binding agents of
osteoprotegerin ***binding***
protein

JOURNAL (SO): Patent: WO 0162932-A 123 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..39	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):

1 cagggtgccc tggccccagt aggcaaaata gtacgctat

L3 ANSWER 86 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232636 GenBank (R)

GenBank VERSION (VER): AX232636.1 GI:15592630
 CAS REGISTRY NO. (RN): 357143-59-0
 SEQUENCE LENGTH (SQL): 42
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 122 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 10 a 12 c 11 g 9 t
 REFERENCE: 1 (bases 1 to 42)
 AUTHOR (AU): Deshpande,R.V.; Hitz,A.; Boyle,W.J.; Sullivan,J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 122 30-AUG-2001; Amgen Inc. (US)

Feature Key	Location	Qualifier
source	1..42	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):
 1 cagggtgccc tggccccagt agtcagcata gtacgctata at

L3 ANSWER 87 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232635 GenBank (R)
 GenBank ACC. NO. (GBN): AX232635
 GenBank VERSION (VER): AX232635.1 GI:15592629
 CAS REGISTRY NO. (RN): 357143-58-9
 SEQUENCE LENGTH (SQL): 45
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 121 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 12 a 13 c 10 g 10 t
 REFERENCE: 1 (bases 1 to 45)
 AUTHOR (AU): Deshpande,R.V.; Hitz,A.; Boyle,W.J.; Sullivan,J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 121 30-AUG-2001; Amgen Inc. (US)

Feature Key	Location	Qualifier
source	1..45	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):
 1 ggtgcccctgg ccccgtagt caaaagcgta cgctataata attcc

L3 ANSWER 88 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232634 GenBank (R)
 GenBank ACC. NO. (GBN): AX232634
 GenBank VERSION (VER): AX232634.1 GI:15592628
 CAS REGISTRY NO. (RN): 357143-57-8
 SEQUENCE LENGTH (SQL): 45
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 120 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 12 a 13 c 10 g 10 t
 REFERENCE: 1 (bases 1 to 45)
 AUTHOR (AU): Deshpande,R.V.; Hitz,A.; Boyle,W.J.; Sullivan,J.K.

osteoprotegerin ***binding***
protein

JOURNAL (SO): Patent: WO 0162932-A 120 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..45	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):

1 ggtgccctgg cccagtagt caaaataggc cgctataata attcc

L3 ANSWER 89 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232633 GenBank (R)

GenBank ACC. NO. (GBN): AX232633

GenBank VERSION (VER): AX232633.1 GI:15592627

CAS REGISTRY NO. (RN): 357143-56-7

SEQUENCE LENGTH (SQL): 36

MOLECULE TYPE (CI): DNA; linear

DIVISION CODE (CI): Patent

DATE (DATE): 11 Sep 2001

DEFINITION (DEF): Sequence 119 from Patent WO0162932.

SOURCE: synthetic construct.

ORGANISM (ORGN): synthetic construct

artificial sequence

NUCLEIC ACID COUNT (NA): 13 a 9 c 6 g 8 t

REFERENCE: 1 (bases 1 to 36)

AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.

TITLE (TI): Antagonistic selective binding agents of
osteoprotegerin ***binding***
protein

JOURNAL (SO): Patent: WO 0162932-A 119 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..36	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):

1 gtagtcaaaa tagtagcgtg caataattcc ccgaac

L3 ANSWER 90 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232632 GenBank (R)

GenBank ACC. NO. (GBN): AX232632

GenBank VERSION (VER): AX232632.1 GI:15592626

CAS REGISTRY NO. (RN): 357143-55-6

SEQUENCE LENGTH (SQL): 39

MOLECULE TYPE (CI): DNA; linear

DIVISION CODE (CI): Patent

DATE (DATE): 11 Sep 2001

DEFINITION (DEF): Sequence 118 from Patent WO0162932.

SOURCE: synthetic construct.

ORGANISM (ORGN): synthetic construct

artificial sequence

NUCLEIC ACID COUNT (NA): 13 a 10 c 7 g 9 t

REFERENCE: 1 (bases 1 to 39)

AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.

TITLE (TI): Antagonistic selective binding agents of
osteoprotegerin ***binding***
protein

JOURNAL (SO): Patent: WO 0162932-A 118 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..39	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):

1 gtagtcaaaa tagtagcgtg tggcaattcc ccgaaccat

LOCUS (LOC): AX232631 GenBank (R)
 GenBank ACC. NO. (GBN): AX232631
 GenBank VERSION (VER): AX232631.1 GI:15592625
 CAS REGISTRY NO. (RN): 357143-54-5
 SEQUENCE LENGTH (SQL): 42
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 117 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 14 a 10 c 7 g 11 t
 REFERENCE: 1 (bases 1 to 42)
 AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 117 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..42	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):
 1 gtagtcaaaa tagtacgcta taatggctcc ccgaaccata tt

L3 ANSWER 92 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232630 GenBank (R)
 GenBank ACC. NO. (GBN): AX232630
 GenBank VERSION (VER): AX232630.1 GI:15592624
 CAS REGISTRY NO. (RN): 357143-53-4
 SEQUENCE LENGTH (SQL): 45
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 116 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 17 a 8 c 7 g 13 t
 REFERENCE: 1 (bases 1 to 45)
 AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 116 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..45	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):
 1 gtagtcaaaa tagtacgcta taataattgc ccgaaccata tttga

L3 ANSWER 93 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232629 GenBank (R)
 GenBank ACC. NO. (GBN): AX232629
 GenBank VERSION (VER): AX232629.1 GI:15592623
 CAS REGISTRY NO. (RN): 357143-52-3
 SEQUENCE LENGTH (SQL): 38
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 115 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence

REFERENCE: 1 (bases 1 to 38)
AUTHOR (AU): Deshpande,R.V.; Hitz,A.; Boyle,W.J.; Sullivan,J.K.
TITLE (TI): Antagonistic selective binding agents of
osteoprotegerin ***binding***
protein
JOURNAL (SO): Patent: WO 0162932-A 115 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..38	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):
1 gattcctcaa atatggttgc cggaattatt atagcgta

L3 ANSWER 94 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232628 GenBank (R)
GenBank ACC. NO. (GBN): AX232628
GenBank VERSION (VER): AX232628.1 GI:15592622
CAS REGISTRY NO. (RN): 357143-51-2
SEQUENCE LENGTH (SQL): 36
MOLECULE TYPE (CI): DNA; linear
DIVISION CODE (CI): Patent
DATE (DATE): 11 Sep 2001
DEFINITION (DEF): Sequence 114 from Patent WO0162932.
SOURCE: synthetic construct.
ORGANISM (ORGN): synthetic construct
artificial sequence

NUCLEIC ACID COUNT (NA): 10 a 6 c 9 g 11 t

REFERENCE: 1 (bases 1 to 36)
AUTHOR (AU): Deshpande,R.V.; Hitz,A.; Boyle,W.J.; Sullivan,J.K.
TITLE (TI): Antagonistic selective binding agents of
osteoprotegerin ***binding***
protein
JOURNAL (SO): Patent: WO 0162932-A 114 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..36	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):
1 gattcctcaa atatggctcg gggaattatt atagcg

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LOCUS (LOC): AX232627 GenBank (R)
GenBank ACC. NO. (GBN): AX232627
GenBank VERSION (VER): AX232627.1 GI:15592621
CAS REGISTRY NO. (RN): 357143-50-1
SEQUENCE LENGTH (SQL): 36
MOLECULE TYPE (CI): DNA; linear
DIVISION CODE (CI): Patent
DATE (DATE): 11 Sep 2001
DEFINITION (DEF): Sequence 113 from Patent WO0162932.
SOURCE: synthetic construct.
ORGANISM (ORGN): synthetic construct
artificial sequence

NUCLEIC ACID COUNT (NA): 10 a 10 c 7 g 9 t

REFERENCE: 1 (bases 1 to 36)
AUTHOR (AU): Deshpande,R.V.; Hitz,A.; Boyle,W.J.; Sullivan,J.K.
TITLE (TI): Antagonistic selective binding agents of
osteoprotegerin ***binding***
protein
JOURNAL (SO): Patent: WO 0162932-A 113 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..36	/organism="synthetic construct" /db-xref="taxon:32630"

1 aataattccc cgaacggcat ttgaggaatc tctcgc

L3 ANSWER 96 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232626 GenBank (R)
GenBank ACC. NO. (GBN): AX232626
GenBank VERSION (VER): AX232626.1 GI:15592620
CAS REGISTRY NO. (RN): 357143-49-8
SEQUENCE LENGTH (SQL): 39
MOLECULE TYPE (CI): DNA; linear
DIVISION CODE (CI): Patent
DATE (DATE): 11 Sep 2001
DEFINITION (DEF): Sequence 112 from Patent WO0162932.
SOURCE: synthetic construct.
ORGANISM (ORGN): synthetic construct
artificial sequence
NUCLEIC ACID COUNT (NA): 13 a 12 c 6 g 8 t
REFERENCE: 1 (bases 1 to 39)
AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
TITLE (TI): Antagonistic selective binding agents of
osteoprotegerin ***binding***
protein
JOURNAL (SO): Patent: WO 0162932-A 112 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):
Feature Key Location Qualifier
=====+=====+=====

Feature Key	Location	Qualifier
source	1..39	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):
1 aataattccc cgaaccatag ctgaggaatc tctcgcac

L3 ANSWER 97 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232625 GenBank (R)
GenBank ACC. NO. (GBN): AX232625
GenBank VERSION (VER): AX232625.1 GI:15592619
CAS REGISTRY NO. (RN): 357143-48-7
SEQUENCE LENGTH (SQL): 42
MOLECULE TYPE (CI): DNA; linear
DIVISION CODE (CI): Patent
DATE (DATE): 11 Sep 2001
DEFINITION (DEF): Sequence 111 from Patent WO0162932.
SOURCE: synthetic construct.
ORGANISM (ORGN): synthetic construct
artificial sequence
NUCLEIC ACID COUNT (NA): 13 a 12 c 6 g 11 t
REFERENCE: 1 (bases 1 to 42)
AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
TITLE (TI): Antagonistic selective binding agents of
osteoprotegerin ***binding***
protein
JOURNAL (SO): Patent: WO 0162932-A 111 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):
Feature Key Location Qualifier
=====+=====+=====

Feature Key	Location	Qualifier
source	1..42	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):
1 aataattccc cgaaccatat ttgcggaatc tctcgcacag ta

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LOCUS (LOC): AX232624 GenBank (R)
GenBank ACC. NO. (GBN): AX232624
GenBank VERSION (VER): AX232624.1 GI:15592618
CAS REGISTRY NO. (RN): 357143-47-6
SEQUENCE LENGTH (SQL): 39
MOLECULE TYPE (CI): DNA; linear
DIVISION CODE (CI): Patent
DATE (DATE): 11 Sep 2001
DEFINITION (DEF): Sequence 110 from Patent WO0162932.

ORGANISM (ORGN): synthetic construct
artificial sequence
NUCLEIC ACID COUNT (NA): 9 a 6 c 12 g 12 t
REFERENCE: 1 (bases 1 to 39)
AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
TITLE (TI): Antagonistic selective binding agents of
osteoprotegerin ***binding***
protein
JOURNAL (SO): Patent: WO 0162932-A 110 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):
Feature Key Location Qualifier
=====+=====+=====

Feature Key	Location	Qualifier
source	1..39	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):
1 gtgtattact gtgcgagaga tgcctcaaat atggttcgg

L3 ANSWER 99 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232623 GenBank (R)
GenBank ACC. NO. (GBN): AX232623
GenBank VERSION (VER): AX232623.1 GI:15592617
CAS REGISTRY NO. (RN): 357143-46-5
SEQUENCE LENGTH (SQL): 39
MOLECULE TYPE (CI): DNA; linear
DIVISION CODE (CI): Patent
DATE (DATE): 11 Sep 2001
DEFINITION (DEF): Sequence 109 from Patent WO0162932.
SOURCE: synthetic construct.
ORGANISM (ORGN): synthetic construct
artificial sequence
NUCLEIC ACID COUNT (NA): 8 a 7 c 11 g 13 t
REFERENCE: 1 (bases 1 to 39)
AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
TITLE (TI): Antagonistic selective binding agents of
osteoprotegerin ***binding***
protein
JOURNAL (SO): Patent: WO 0162932-A 109 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):
Feature Key Location Qualifier
=====+=====+=====

Feature Key	Location	Qualifier
source	1..39	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):
1 gtgtattact gtgcgagagc ttcctcaaat atggttcgg

L3 ANSWER 100 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232622 GenBank (R)
GenBank ACC. NO. (GBN): AX232622
GenBank VERSION (VER): AX232622.1 GI:15592616
CAS REGISTRY NO. (RN): 357143-45-4
SEQUENCE LENGTH (SQL): 36
MOLECULE TYPE (CI): DNA; linear
DIVISION CODE (CI): Patent
DATE (DATE): 11 Sep 2001
DEFINITION (DEF): Sequence 108 from Patent WO0162932.
SOURCE: synthetic construct.
ORGANISM (ORGN): synthetic construct
artificial sequence
NUCLEIC ACID COUNT (NA): 9 a 11 c 10 g 6 t
REFERENCE: 1 (bases 1 to 36)
AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
TITLE (TI): Antagonistic selective binding agents of
osteoprotegerin ***binding***
protein
JOURNAL (SO): Patent: WO 0162932-A 108 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):
Feature Key Location Qualifier
=====+=====+=====

Feature Key	Location	Qualifier
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SEQUENCE (SEQ):

1 cagggtgccc tggccccagt agtcaaaata gtacgc

L3 ANSWER 101 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232621 GenBank (R)
 GenBank ACC. NO. (GBN): AX232621
 GenBank VERSION (VER): AX232621.1 GI:15592615
 CAS REGISTRY NO. (RN): 357143-44-3
 SEQUENCE LENGTH (SQL): 33
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 107 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 9 a 5 c 8 g 11 t
 REFERENCE: 1 (bases 1 to 33)
 AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 107 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..33	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):

1 gtgtattact gtgcgagaga ttctctaaat atg

L3 ANSWER 102 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232620 GenBank (R)
 GenBank ACC. NO. (GBN): AX232620
 GenBank VERSION (VER): AX232620.1 GI:15592614
 CAS REGISTRY NO. (RN): 357143-43-2
 SEQUENCE LENGTH (SQL): 36
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 106 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 14 a 8 c 5 g 9 t
 REFERENCE: 1 (bases 1 to 36)
 AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 106 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..36	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):

1 gtagtcaaaa tagtacgcta taataattcc ccgaac

L3 ANSWER 103 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232619 GenBank (R)
 GenBank ACC. NO. (GBN): AX232619
 GenBank VERSION (VER): AX232619.1 GI:15592613
 CAS REGISTRY NO. (RN): 357143-42-1
 SEQUENCE LENGTH (SQL): 39
 MOLECULE TYPE (CI): DNA; linear

DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 105 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 12 a 5 c 10 g 12 t
 REFERENCE: 1 (bases 1 to 39)
 AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 105 30-AUG-2001; Amgen Inc. (US)

Feature Key	Location	Qualifier
source	1..39	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):
 1 agagattcct caaatatggt tcggggaatt attatagcg

L3 ANSWER 104 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232617 GenBank (R)
 GenBank ACC. NO. (GBN): AX232617
 GenBank VERSION (VER): AX232617.1 GI:15592612
 CAS REGISTRY NO. (RN): 357143-41-0
 SEQUENCE LENGTH (SQL): 25
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 103 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 3 a 9 c 4 g 9 t
 REFERENCE: 1 (bases 1 to 25)
 AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 103 30-AUG-2001; Amgen Inc. (US)

Feature Key	Location	Qualifier
source	1..25	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):
 1 cctctcctcg agttagtcta tgtcc

L3 ANSWER 105 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232616 GenBank (R)
 GenBank ACC. NO. (GBN): AX232616
 GenBank VERSION (VER): AX232616.1 GI:15592611
 CAS REGISTRY NO. (RN): 357143-40-9
 SEQUENCE LENGTH (SQL): 30
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 102 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 6 a 6 c 8 g 10 t
 REFERENCE: 1 (bases 1 to 30)
 AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 102 30-AUG-2001; Amgen Inc. (US)

Feature Key	Location	Qualifier
source	1..30	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):
1 ctggctactg aatatcttca gctgatggtg

L3 ANSWER 106 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232615 GenBank (R)
 GenBank ACC. NO. (GBN): AX232615
 GenBank VERSION (VER): AX232615.1 GI:15592610
 CAS REGISTRY NO. (RN): 357143-39-6
 SEQUENCE LENGTH (SQL): 30
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 101 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 6 a 7 c 8 g 9 t
 REFERENCE: 1 (bases 1 to 30)
 AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 101 30-AUG-2001; Amgen Inc. (US)

Feature Key	Location	Qualifier
source	1..30	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):
1 agtagccagg tctcccgatg tttcatgatg

L3 ANSWER 107 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232614 GenBank (R)
 GenBank ACC. NO. (GBN): AX232614
 GenBank VERSION (VER): AX232614.1 GI:15592609
 CAS REGISTRY NO. (RN): 357143-38-5
 SEQUENCE LENGTH (SQL): 23
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 100 from Patent WO0162932.
 SOURCE: synthetic construct.
 ORGANISM (ORGN): synthetic construct
 artificial sequence
 NUCLEIC ACID COUNT (NA): 7 a 7 c 4 g 5 t
 REFERENCE: 1 (bases 1 to 23)
 AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 100 30-AUG-2001; Amgen Inc. (US)

Feature Key	Location	Qualifier
source	1..23	/organism="synthetic construct" /db-xref="taxon:32630"

SEQUENCE (SEQ):
1 cctctcatat ggactacaag gac

L3 ANSWER 108 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232589 GenBank (R)
 GenBank ACC. NO. (GBN): AX232589
 GenBank VERSION (VER): AX232589.1 GI:15592607

SEQUENCE LENGTH (SQL): 522
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 75 from Patent WO0162932.
 SOURCE: house mouse.
 ORGANISM (ORGN): Mus musculus
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
 Euteleostomi; Mammalia; Eutheria; Rodentia;
 Sciurognathi; Muridae; Murinae; Mus

NUCLEIC ACID COUNT (NA): 149 a 127 c 117 g 129 t
 REFERENCE: 1 (bases 1 to 522)
 AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 75 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..522	/organism="Mus musculus" /db-xref="taxon:10090"
CDS	4..516	/note="unnamed protein product" /codon-start=1 /protein-id="CAC69727.1" /db-xref="GI:15592608" /translation="MDYKDDDDKKLKPEAQPF LTINAASIPSGSHKVTLSWYHDR GWAKISNMTLSNGKLRVNQDGFYYLYANICFRHH ETSGDLATEYQLQMVYVVKTSIKI PSSHNLMKGGSTKNWSGNSEFHFYSINVGGFFKL RAGEEISIQVSNPSLLDPDQDATY FGAFKVQDID"

SEQUENCE (SEQ):

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1 catatggact acaaggacga cgatgacaag aagcttaagc ctgaggccca gccatttgca
61 cacctcacca tcaatgctgc cagcatccca tcgggttccc ataaagtcac tctgtcctct
121 tgggtaccacg atcgaggctg ggccaagatc tctaactga cgtaagcaa cggaaaacta
181 aggggttaacc aagatggctt ctattacctg tacgctaaca tttgctttcg gcatcatgaa
241 acatcgggag acctggctac tgaatatctt cagctgatgg tgtatgtcgt taaaaccagc
301 atcaaaatcc caagtcttca taacctgatg aaaggaggga gcacgaaaaa ctggtcgggc
361 aattctgaat tccactttta ttccataaat gttgggggat ttttcaagct ccgagctggg
421 gaagaaatta gcattcaggt gtccaaccct tccctgctgg atccggatca agatgcgacg
481 tactttgggg ctttcaaagt tcaggacata gactaactcg ag
  
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L3 ANSWER 109 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232572 GenBank (R)
 GenBank ACC. NO. (GBN): AX232572
 GenBank VERSION (VER): AX232572.1 GI:15592605
 CAS REGISTRY NO. (RN): 391057-98-0
 SEQUENCE LENGTH (SQL): 681
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 58 from Patent WO0162932.
 SOURCE: human.
 ORGANISM (ORGN): Homo sapiens
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
 Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini;
 Hominidae; Homo

NUCLEIC ACID COUNT (NA): 145 a 207 c 194 g 135 t
 REFERENCE: 1 (bases 1 to 681)
 AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 58 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..681	/organism="Homo sapiens" /db-xref="taxon:9606"

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/codon-start=1
/protein-id="CAC69726.1"
/db-xref="GI:15592606"
/translation="AEVQLLES GGGLVQPGRSLR
LSCAASGFTFDDYAMHWVRQAPGK
GLEWVSGISWNSGRIGYADSVKGRFTISRDNANKN
SLYLQMNLSLRPEDTAFYYCAKGGG
TSARYSSGWYYWGQGT LVTVSSASTKGPSVFPLA
PSSKSTSGGTAALGCLVKDYFPEP
VTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVVT
VPSSSLGTQTYICNVNHNKPSNTKV
DKKVEPKSC"

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SEQUENCE (SEQ):

```

1 gccgaggtgc agctgctgga gtctggggga ggcttggtac aacctggcag gtccctgaga
61 ctctcctgtg cagcctcttg attcaccttt gatgattatg ccatgcactg ggtccggcaa
121 gctccaggga agggcctgga gtgggtctca ggtattagtt ggaatagtgg taggataggc
181 tatgcggact ctgtgaaggg ccgattcacc atctccagag acaacgccaa gaactccctg
241 tatctgcaaa tgaacagtct gagacctgag gacacggcct tctattactg tgcaaaaggg
301 gggtctacaa gcgcgaggta tagcagtggc tgggtactact ggggccaggg caccctggtc
361 accgtctcaa gcgcctccac caagggccca tgggtcttcc ccctggcacc ctccctccaag
421 agcacctctg ggggcacagc ggccctgggc tgcctgggtca aggactactt ccccgaaaccg
481 gtgacgggtg cgtggaactc aggcgcctg accagcggcg tccacacctt cccggctgtc
541 ctacagtcct caggactcta ctccctcagc agcgtagtga ccgtgccctc cagcagcttg
601 ggcacccaga cctacatctg caacgtgaat cacaagccca gcaacaccaa ggtggacaag
661 aaagttgagc ccaaatcttg t

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L3 ANSWER 110 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232570 GenBank (R)
 GenBank ACC. NO. (GBN): AX232570
 GenBank VERSION (VER): AX232570.1 GI:15592603
 CAS REGISTRY NO. (RN): 391057-97-9
 SEQUENCE LENGTH (SQL): 660
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 56 from Patent WO0162932.
 SOURCE: human.
 ORGANISM (ORGN): Homo sapiens
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
 Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini;
 Hominidae; Homo
 NUCLEIC ACID COUNT (NA): 142 a 202 c 184 g 132 t
 REFERENCE: 1 (bases 1 to 660)
 AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 56 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..660	/organism="Homo sapiens" /db-xref="taxon:9606"
CDS	<1..>660	/note="unnamed protein product" /codon-start=1 /protein-id="CAC69725.1" /db-xref="GI:15592604" /translation="AEVQLVQSGGGLVQPGGSLR LSCLVSGFTFNNYPMHWVRQAPGK GLEWVAVISYDGNNKYYADSVKGRFTISRDNANKN TLYLQMNLSLRSED TAVYYCARGGG GFDYWGGQGT LVTVSSASTKGPSVFPLAPSSKSTS GGTAALGCLVKDYFPEPVTVSWNS GALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLG TQTYICNVNHNKPSNTKVDKKVEPK SC"

SEQUENCE (SEQ):

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1 gccgaggtcc agctggtgca gtctggggga ggcttggtcc agcctggggg gtccctgaga
61 ctctcctgtt tagtctctgg attcaccttc aataactatc ctatgcactg ggtccggcag
121 gctccaggca aggggctgga gtgggtggca gttatatcat atgatggaaa taataaatac
181 tacgcagact ccgtgaaggg ccgattcacc atctccagag acaattccaa gaacacgctg
241 tatttgcaaa tgaacagcct gagatctgag gacacggccg tgtattactg tgcgaggggg

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361 aagggcccat cggctctccc cctggcacc cctccaaga gcacctctgg gggcacagcg
421 gccctgggct gcctgggtcaa ggactacttc cccgaaccgg tgacgggtgtc gtggaactca
481 ggcgccttga ccagcggcgt ccacaccttc ccggctgttc tacagtcttc aggactctac
541 tccctcagca gcgtagtgtgac cgtgccctcc agcagcttgg gcacccagac ctacatctgc
601 aacgtgaatc acaagcccag caacaccaag gtggacaaga aagttgagcc caaatcttgt

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L3 ANSWER 111 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232568 GenBank (R)
 GenBank ACC. NO. (GBN): AX232568
 GenBank VERSION (VER): AX232568.1 GI:15592601
 CAS REGISTRY NO. (RN): 391057-96-8
 SEQUENCE LENGTH (SQL): 690
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 54 from Patent WO0162932.
 SOURCE: human.
 ORGANISM (ORGN): Homo sapiens
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
 Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini;
 Hominidae; Homo
 NUCLEIC ACID COUNT (NA): 156 a 204 c 193 g 137 t
 REFERENCE: 1 (bases 1 to 690)
 AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 54 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..690	/organism="Homo sapiens" /db-xref="taxon:9606"
CDS	<1..>690	/note="unnamed protein product" /codon-start=1 /protein-id="CAC69724.1" /db-xref="GI:15592602" /translation="AEVQLVQSGAEVRKPGASVK VSKASGYDFSNYAIHWVRQAPGQ RLEWMGWINAGNGNTKFSQKFQGRITVTRDTAAS TAYMELRSLRSEDVAVYYCARDSS NMVRGIIIIAYYFDYWGGQTLTVSSASTKGPSVF PLAPSSKSTSGGTAALGCLVKDYF PEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSS VVTVPSSSLGTQTYICNVNHKPSN TKVDKKVEPKSC"

SEQUENCE (SEQ):

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1 gccgaggtcc agctgggtgca gtctggggct gaggtgagga agcctggggc ctcagtgaag
61 gtttcctgca aggccttctgg atacgacttc agtaattatg ctatacattg ggtgcgccag
121 gcccccgac aaaggcttga gtggatggga tggatcaacg ctggcaatgg gaacacaaaa
181 ttttcacaga agttccaggg cagaatcacc gttaccaggg acacagccgc gagcacagcc
241 tacatggagc tgcgcagtct gagatctgaa gacacggctg tgtattactg tgcgagagat
301 tcctcaaata tggttcgggg aattattata gcgtactatt ttgactactg gggccagggc
361 accctgggtca ccgtctcaag cgcctccacc aagggcccat cggctctccc cctggcacc
421 tcctccaaga gcacctctgg gggcacagcg gccctgggct gcctgggtcaa ggactacttc
481 cccgaaccgg tgacgggtgtc gtggaactca ggcgccttga ccagcggcgt ccacaccttc
541 ccggctgttc tacagtcttc aggactctac tccctcagca gcgtagtgtgac cgtgccctcc
601 agcagcttgg gcacccagac ctacatctgc aacgtgaatc acaagcccag caacaccaag
661 gtggacaaga aagttgagcc caaatcttgt

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L3 ANSWER 112 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232566 GenBank (R)
 GenBank ACC. NO. (GBN): AX232566
 GenBank VERSION (VER): AX232566.1 GI:15592599
 CAS REGISTRY NO. (RN): 391057-95-7
 SEQUENCE LENGTH (SQL): 690
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 52 from Patent WO0162932.
 SOURCE: human.

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini;
Hominidae; Homo

NUCLEIC ACID COUNT (NA): 156 a 205 c 192 g 137 t

REFERENCE: 1 (bases 1 to 690)

AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.

TITLE (TI): Antagonistic selective binding agents of
osteoprotegerin ***binding***
protein

JOURNAL (SO): Patent: WO 0162932-A 52 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..690	/organism="Homo sapiens"
CDS	<1..>690	/db-xref="taxon:9606" /note="unnamed protein product" /codon-start=1 /protein-id="CAC69723.1" /db-xref="GI:15592600" /translation="AQVQLVQSGAEVRKPGASVK VSCKASGYDFSNYAIHWVRQAPGQ RLEWMGWINAGNGNTKFSQKFQGRITVTRDTAAS TAYMELRSLRSEDYAVYYCARDSS NMVRGIIIAYYFDYWGGQTLTVTVSSASTKGPSVF PLAPSSKSTSGGTAALGCLVKDYF PEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSS VVTVPSSSLGTQTYICNVNHKPSN TKVDKKVEPKSC"

SEQUENCE (SEQ):

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1  gcccaggtcc agctggtgca gtctggggct gaggtgagga agcctggggc ctcagtgaag
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121 gcccccgac aaaggcttga gtggatggga tggatcaacg ctggcaatgg gaacacaaaa
181 ttttcacaga agttccaggg cagaatcacc gttaccaggg acacagccgc gagcacagcc
241 tacatggagc tgcgcagtct gagatctgaa gacacggctg tgtattactg tgcgagagat
301 tcctcaaata tgggttcgggg aattattata gcgtactatt ttgactactg gggccagggc
361 accctggtca ccgtctcaag cgcctccacc aaggggcccat cggctcttccc cctggcaccc
421 tcctccaaga gcacctctgg gggcacagcg gccctgggct gcctggtcaa ggactacttc
481 cccgaaccgg tgacgggtgtc gtggaactca ggcgccttga ccagcggcgt ccacaccttc
541 ccggctgtcc tacagtcctc aggactctac tccctcagca gcgtagtgac cgtgcccttc
601 agcagcttgg gcaccagac ctacatctgc aacgtgaatc acaagcccg caacaccaag
661 gtggacaaga aagttgagcc caaatcttgt
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L3 ANSWER 113 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232564 GenBank (R)

GenBank ACC. NO. (GBN): AX232564

GenBank VERSION (VER): AX232564.1 GI:15592597

CAS REGISTRY NO. (RN): 391057-94-6

SEQUENCE LENGTH (SQL): 654

MOLECULE TYPE (CI): DNA; linear

DIVISION CODE (CI): Patent

DATE (DATE): 11 Sep 2001

DEFINITION (DEF): Sequence 50 from Patent WO0162932.

SOURCE: human.

ORGANISM (ORGN): Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini;
Hominidae; Homo

NUCLEIC ACID COUNT (NA): 163 a 189 c 180 g 122 t

REFERENCE: 1 (bases 1 to 654)

AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.

TITLE (TI): Antagonistic selective binding agents of
osteoprotegerin ***binding***
protein

JOURNAL (SO): Patent: WO 0162932-A 50 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..654	/organism="Homo sapiens"
CDS	<1..>654	/db-xref="taxon:9606" /note="unnamed protein product" /codon-start=1

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/db-xref="GI:15592598"
/translation="SHSAQSVLTQPPSVSVSPGQ
TATITCSGDALPKQYVYWRQKPG
QAPLLVIYEDSERPSGIPERFSGSSSGTEVTL SI
SGVQAEDEADYYCQSTDSSGTYVV
FGGGTKLTVLSQPKAAPSVTLFPPSSEELQANKA
TLVCLISDFYPGAVTVAWKADSSP
VKAGVETTTTPSKQSNNKYAASSYLSLTPEQWKSH
RSYSCQVTHEGSTVEKTVAPTECS "

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SEQUENCE (SEQ):

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1 tctcacagtg cacagtctgt gctgactcag ccaccctcgg tgtcagtgtc cccaggacag
61 acggccacga tcacctgctc tggagatgca ttgccaaagc aatatgttta ttggtaccgg
121 cagaagccag gccaggcccc tctattggtg atatatgaag acagtgagag gccctcaggg
181 atccctgaac gattctcttg ctccagttca gggactgaag tcacgttgag tatcagtgga
241 gtccaggcag aagacgaggc tgactattat tgtcaatcaa cagacagcag tgggacttat
301 gtcgtcttcg gcggagggac caagctgacc gtcctaagtc agcccaaggc tgccccctcg
361 gtcactctgt tcccgcctc ctctgaggag cttcaagcca acaaggccac actgggtgtgt
421 ctcataagtg acttctaccc gggagccgtg acagtggcct ggaaggcaga tagcagcccc
481 gtcaaggcgg gagtggagac caccacaccc tccaaacaaa gcaacaacaa gtacgcggcc
541 agcagctatc tgagcctgac gcctgagcag tggaagtccc acagaagcta cagctgccag
601 gtcacgcatg aaggggagcac cgtggagaag acagtggccc ctacagaatg ttca

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L3 ANSWER 114 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232562 GenBank (R)
 GenBank ACC. NO. (GBN): AX232562
 GenBank VERSION (VER): AX232562.1 GI:15592595
 CAS REGISTRY NO. (RN): 391057-93-5
 SEQUENCE LENGTH (SQL): 645
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 48 from Patent WO0162932.
 SOURCE: human.
 ORGANISM (ORGN): Homo sapiens
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
 Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini;
 Hominidae; Homo

NUCLEIC ACID COUNT (NA): 163 a 182 c 171 g 129 t
 REFERENCE: 1 (bases 1 to 645)
 AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 48 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..645	/organism="Homo sapiens"
CDS	<1..>645	/db-xref="taxon:9606" /note="unnamed protein product" /codon-start=1 /protein-id="CAC69721.1" /db-xref="GI:15592596" /translation="HSALEIVMTQSPGTLSPG ERATLSCRASQSVSSSLAWYQQK PGQAPRLLIYGASSRATGIPDRFSGSGSGTDFTL TISRLEPEDFAVYYCQYGAFGGG TKVEIKRTVAAPSVFIFPPSDEQLKSGTASVVCL LNNFYPREAKVQWKVDNALQSGNS QESVTEQDSKSTYLSSTLTLSKADYEKHKVYA CEVTHQGLNSPVTKSFNRGEC"

SEQUENCE (SEQ):

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1 cacagtgcac ttgaaattgt gatgacacag tctccaggca ccctgtcttt gtctccaggg
61 gaaagagcca ccctctcctg cagggccagt cagagtgtta gcagcagctc cttagcctgg
121 taccagcaga aacctggcca ggctcccagg ctctcatct atggtgcatc cagcagggcc
181 actggcatcc cagacaggtt cagtggcagt gggctctgga cagacttcac tctcaccatc
241 agcagactgg agcctgaaga ttttgtagtg tattactgtc agcagtatgg tgctttcggc
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361 ccatctgatg agcagttgaa atctggaact gcctctgttg tgtgctgtct gaataacttc
421 tatcccagag aggccaaagt acagtggaaag gtggataacg ccctccaatc gggtaactcc
481 caggagagtg tcacagagca ggacagcaag gacagcacct acagcctcag cagcacccctg

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601 ggcctgaact cgcccgctcac aaagagcttc aacaggggag agtgt

L3 ANSWER 115 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232560 GenBank (R)
GenBank ACC. NO. (GBN): AX232560
GenBank VERSION (VER): AX232560.1 GI:15592593
CAS REGISTRY NO. (RN): 391057-92-4
SEQUENCE LENGTH (SQL): 645
MOLECULE TYPE (CI): DNA; linear
DIVISION CODE (CI): Patent
DATE (DATE): 11 Sep 2001
DEFINITION (DEF): Sequence 46 from Patent WO0162932.
SOURCE: human.
ORGANISM (ORGN): Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini;
Hominidae; Homo
NUCLEIC ACID COUNT (NA): 163 a 188 c 162 g 132 t
REFERENCE: 1 (bases 1 to 645)
AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
TITLE (TI): Antagonistic selective binding agents of
osteoprotegerin ***binding***
protein
JOURNAL (SO): Patent: WO 0162932-A 46 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..645	/organism="Homo sapiens" /db-xref="taxon:9606"
CDS	<1..>645	/note="unnamed protein product" /codon-start=1 /protein-id="CAC69720.1" /db-xref="GI:15592594" /translation="SHSALEIVLTQSPATLSFSP GERATLSCRASQSVGSYLAWYQQR PGQAPRPLIYDATNRATGIPTRFSGSGSGTDFTL TISSLEPEDFATYYCQHRRTFGRG TKLEIKRTVAAPSVFIFPPSDEQLKSGTASVVCL LNNFYFPREAKVQWKVDNALQSGNS QESVTEQDSKDYSLSTLTLSKADYEEKHKVYA CEVTHQGLSSPVTKSFNRGEC"

SEQUENCE (SEQ):

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1 tctcacagtg cacttgaaat tgtgctgact cagtctccag ccaccctgtc tttttctccg
61 ggtgaaagag ccaccctctc ctgcagggcc agtcagagtg ttggcagcta cttagcctgg
121 taccagcaga gacctggcca ggctcccagg cccctcatct atgatgcaac caacagggcc
181 actggcatcc caaccagggt cagtggcagt gggctctggga cagacttcac tctcaccatc
241 agcagcctag agcctgaaga ttttgcaact tattactgtc aacaccgaag gacttttggc
301 cgggggacca agttggagat caaacgaact gtggctgcac catctgtctt catcttcccg
361 ccatctgatg agcagttgaa atctggaact gcctctgttg tgtgcctgct gaataacttc
421 tatcccagag aggccaaagt acagtggaag gtggataacg cctccaatc gggtaactcc
481 caggagagtg tcacagagca ggacagcaag gaagcacct acagcctcag cagcaccctg
541 acgctgagca aagcagacta cgagaaacac aaagctctac cctgcgaagt cactcatcag
601 ggcctgagct cgcccgctcac aaagagcttc aacaggggag agtgt
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L3 ANSWER 116 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232558 GenBank (R)
GenBank ACC. NO. (GBN): AX232558
GenBank VERSION (VER): AX232558.1 GI:15592591
CAS REGISTRY NO. (RN): 391057-91-3
SEQUENCE LENGTH (SQL): 645
MOLECULE TYPE (CI): DNA; linear
DIVISION CODE (CI): Patent
DATE (DATE): 11 Sep 2001
DEFINITION (DEF): Sequence 44 from Patent WO0162932.
SOURCE: human.
ORGANISM (ORGN): Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini;
Hominidae; Homo
NUCLEIC ACID COUNT (NA): 172 a 177 c 160 g 136 t
REFERENCE: 1 (bases 1 to 645)

TITLE (TI): Antagonistic selective binding agents or
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 44 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..645	/organism="Homo sapiens"
CDS	<1..>645	/db-xref="taxon:9606" /note="unnamed protein product" /codon-start=1 /protein-id="CAC69719.1" /db-xref="GI:15592592" /translation="SHSALEIVMTQSPSSLSASV GDRVITITCRASQSIISRYLNWYQLK PGKAPRLLIYGASSLQSGVPSRFSGSGSGAEFTL TISSLQPEDIAITYYCQHTRAFGQG TKVEIKRTVAAPSVFIFPPSDEQLKSGTASVVCL LNNFYFPREAKVQWKVDNALQSGNS QESATEQDSKDSYSLSSLTTLTKADYEKHKVYA CEVTHQGLSSPVTKSFNRGEC"

SEQUENCE (SEQ):

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1 tctcacagtg cacttgaaat tgtgatgacg cagtctccat cctccctgtc tgcgtctggt
61 ggagacagag tcaccatcac ttgccgggca agtcagagca ttagcagata tttaaattgg
121 tatcagctta aaccagggaa agcccctagg ctccctgatct atggtgcatc cagtttgcaa
181 agtggagttcc catcaagggt cagtggcagt ggatctgggg cagagttcac tctcaccatc
241 agcagtctac aacctgaaga cattgccact tactactgtc aacacactcg ggcgttcggc
301 caagggacca aggttgaaat caagcgaact gtggctgcac catctgtctt catcttccc
361 ccatctgatg agcagttgaa atctggaact gcctctgttg tgtgcctgct gaataacttc
421 tatcccagag aggccaaagt acagtggaag gtggataacg ccctccaatc gggtaactcc
481 caggagagtg ccacagagca ggacagcaag gacagcacct acagcctcag cagcaccctg
541 acgctgagca aagcagacta cgagaaacac aaagtctacg cctgcgaagt caccatcag
601 ggcctgagct cgcccgtcac aaagagcttc aacaggggag agtgt

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L3 ANSWER 117 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232555 GenBank (R)
 GenBank ACC. NO. (GBN): AX232555
 GenBank VERSION (VER): AX232555.1 GI:15592589
 CAS REGISTRY NO. (RN): 357143-28-3
 SEQUENCE LENGTH (SQL): 32
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 41 from Patent WO0162932.
 SOURCE: human.
 ORGANISM (ORGN): Homo sapiens
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
 Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini;
 Hominidae; Homo

NUCLEIC ACID COUNT (NA): 6 a 10 c 5 g 11 t

REFERENCE:
 1 (bases 1 to 32)
 AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein

JOURNAL (SO): Patent: WO 0162932-A 41 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..32	/organism="Homo sapiens"
CDS	<20..>31	/db-xref="taxon:9606" /note="unnamed protein product" /codon-start=1 /protein-id="CAC69718.1" /db-xref="GI:15592590" /translation="TLSP"

SEQUENCE (SEQ):

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1 tttggacgtc gacttattaa cactctcccc tg

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L3 ANSWER 118 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232553 GenBank (R)
 GenBank ACC. NO. (GBN): AX232553
 GenBank VERSION (VER): AX232553.1 GI:15592587
 CAS REGISTRY NO. (RN): 357143-27-2
 SEQUENCE LENGTH (SQL): 44
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 39 from Patent WO0162932.
 SOURCE: human.
 ORGANISM (ORGN): Homo sapiens
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
 Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini;
 Hominidae; Homo
 NUCLEIC ACID COUNT (NA): 11 a 6 c 15 g 12 t
 REFERENCE: 1 (bases 1 to 44)
 AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 39 30-AUG-2001; Amgen Inc. (US)

Feature Key	Location	Qualifier
source	1..44	/organism="Homo sapiens"
CDS	<2..>43	/db-xref="taxon:9606"
		/note="unnamed protein product"
		/codon-start=1
		/protein-id="CAC69717.1"
		/db-xref="GI:15592588"
		/translation="WLRGARCEIVMTQS"

SEQUENCE (SEQ):
 1 gtggttgaga ggtgccagat gtgaaattgt gatgacacag tctc

L3 ANSWER 119 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232551 GenBank (R)
 GenBank ACC. NO. (GBN): AX232551
 GenBank VERSION (VER): AX232551.1 GI:15592585
 CAS REGISTRY NO. (RN): 357143-26-1
 SEQUENCE LENGTH (SQL): 48
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 37 from Patent WO0162932.
 SOURCE: human.
 ORGANISM (ORGN): Homo sapiens
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
 Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini;
 Hominidae; Homo
 NUCLEIC ACID COUNT (NA): 6 a 13 c 16 g 13 t
 REFERENCE: 1 (bases 1 to 48)
 AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 37 30-AUG-2001; Amgen Inc. (US)

Feature Key	Location	Qualifier
source	1..48	/organism="Homo sapiens"
CDS	<3..>47	/db-xref="taxon:9606"
		/note="unnamed protein product"
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		/protein-id="CAC69716.1"
		/db-xref="GI:15592586"
		/translation="AQLLGLLLLWLRGAR"

SEQUENCE (SEQ):
 1 ccgctcagct cctggggctc ctgctattgt ggttgagagg tgccagat

L3 ANSWER 120 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232549 GenBank (R)
 GenBank ACC. NO. (GBN): AX232549
 GenBank VERSION (VER): AX232549.1 GI:15592583
 CAS REGISTRY NO. (RN): 357143-25-0
 SEQUENCE LENGTH (SQL): 48
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 35 from Patent WO0162932.
 SOURCE: human.
 ORGANISM (ORGN): Homo sapiens
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
 Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini;
 Hominidae; Homo
 NUCLEIC ACID COUNT (NA): 10 a 16 c 14 g 8 t
 REFERENCE: 1 (bases 1 to 48)
 AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 35 30-AUG-2001; Amgen Inc. (US)

Feature Key	Location	Qualifier
source	1..48	/organism="Homo sapiens"
CDS	17..>46	/db-xref="taxon:9606"
		/note="unnamed protein product"
		/codon-start=1
		/protein-id="CAC69715.1"
		/db-xref="GI:15592584"
		/translation="MDMRVPAQLL"

SEQUENCE (SEQ):
 1 cagaagcttg accaccatgg acatgagggt ccccgctcag ctctctggg

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LOCUS (LOC): AX232547 GenBank (R)
 GenBank ACC. NO. (GBN): AX232547
 GenBank VERSION (VER): AX232547.1 GI:15592582
 CAS REGISTRY NO. (RN): 357143-24-9
 SEQUENCE LENGTH (SQL): 30
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 33 from Patent WO0162932.
 SOURCE: human.
 ORGANISM (ORGN): Homo sapiens
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
 Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini;
 Hominidae; Homo
 NUCLEIC ACID COUNT (NA): 7 a 5 c 14 g 4 t
 REFERENCE: 1 (bases 1 to 30)
 AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 33 30-AUG-2001; Amgen Inc. (US)

Feature Key	Location	Qualifier
source	1..30	/organism="Homo sapiens"
		/db-xref="taxon:9606"

SEQUENCE (SEQ):
 1 gtggaggcac tagagacggt gaccaggggtg

L3 ANSWER 122 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232545 GenBank (R)
 GenBank ACC. NO. (GBN): AX232545
 GenBank VERSION (VER): AX232545.1 GI:15592580
 CAS REGISTRY NO. (RN): 357143-23-8

MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 31 from Patent WO0162932.
 SOURCE: human.
 ORGANISM (ORGN): Homo sapiens
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
 Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini;
 Hominidae; Homo

NUCLEIC ACID COUNT (NA): 9 a 12 c 12 g 9 t
 REFERENCE: 1 (bases 1 to 42)
 AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 31 30-AUG-2001; Amgen Inc. (US)

Feature Key	Location	Qualifier
source	1..42	/organism="Homo sapiens"
CDS	<1..>42	/db-xref="taxon:9606" /note="unnamed protein product" /codon-start=1 /protein-id="CAC69714.1" /db-xref="GI:15592581" /translation="SVTTGVHSQVQLVQ"

SEQUENCE (SEQ):
 1 tcagtaacga ctggtgtcca ctcacaggtc cagctggtgc ag

L3 ANSWER 123 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232542 GenBank (R)
 GenBank ACC. NO. (GBN): AX232542
 GenBank VERSION (VER): AX232542.1 GI:15592578
 CAS REGISTRY NO. (RN): 357143-22-7
 SEQUENCE LENGTH (SQL): 44
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 28 from Patent WO0162932.
 SOURCE: human.
 ORGANISM (ORGN): Homo sapiens
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
 Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini;
 Hominidae; Homo

NUCLEIC ACID COUNT (NA): 6 a 12 c 10 g 16 t
 REFERENCE: 1 (bases 1 to 44)
 AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 28 30-AUG-2001; Amgen Inc. (US)

Feature Key	Location	Qualifier
source	1..44	/organism="Homo sapiens"
CDS	<2..31	/db-xref="taxon:9606" /note="unnamed protein product" /codon-start=1 /protein-id="CAC69713.1" /db-xref="GI:15592579" /translation="AGSFSSSCQ"

SEQUENCE (SEQ):
 1 agctgggtct ttctcttctt cctgtcagta acgactggtg tcca

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LOCUS (LOC): AX232540 GenBank (R)
 GenBank ACC. NO. (GBN): AX232540
 GenBank VERSION (VER): AX232540.1 GI:15592576
 CAS REGISTRY NO. (RN): 357143-21-6

MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 26 from Patent WO0162932.
 SOURCE: human.
 ORGANISM (ORGN): Homo sapiens
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
 Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini;
 Hominidae; Homo

NUCLEIC ACID COUNT (NA): 10 a 11 c 11 g 13 t
 REFERENCE: 1 (bases 1 to 45)
 AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 26 30-AUG-2001; Amgen Inc. (US)

Feature Key	Location	Qualifier
source	1..45	/organism="Homo sapiens"
CDS	18..>44	/db-xref="taxon:9606" /note="unnamed protein product" /codon-start=1 /protein-id="CAC69712.1" /db-xref="GI:15592577" /translation="MEWSWVFLF"

SEQUENCE (SEQ):
 1 cagaagctta gaccaccatg gaatggagct gggctcttct cttct

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LOCUS (LOC): AX232537 GenBank (R)
 GenBank ACC. NO. (GBN): AX232537
 GenBank VERSION (VER): AX232537.1 GI:15592575
 CAS REGISTRY NO. (RN): 383240-49-1
 SEQUENCE LENGTH (SQL): 24
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 23 from Patent WO0162932.
 SOURCE: human.
 ORGANISM (ORGN): Homo sapiens
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
 Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini;
 Hominidae; Homo

NUCLEIC ACID COUNT (NA): 3 a 5 c 5 g 11 t
 REFERENCE: 1 (bases 1 to 24)
 AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein
 JOURNAL (SO): Patent: WO 0162932-A 23 30-AUG-2001; Amgen Inc. (US)

Feature Key	Location	Qualifier
source	1..24	/organism="Homo sapiens" /db-xref="taxon:9606"

SEQUENCE (SEQ):
 1 ttgtcgtct ttccagacgt tagt

L3 ANSWER 126 OF 126 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AX232536 GenBank (R)
 GenBank ACC. NO. (GBN): AX232536
 GenBank VERSION (VER): AX232536.1 GI:15592574
 CAS REGISTRY NO. (RN): 357143-20-5
 SEQUENCE LENGTH (SQL): 18
 MOLECULE TYPE (CI): DNA; linear
 DIVISION CODE (CI): Patent
 DATE (DATE): 11 Sep 2001
 DEFINITION (DEF): Sequence 22 from Patent WO0162932.

ORGANISM (ORGN): Homo sapiens
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
 Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini;
 Hominidae; Homo

NUCLEIC ACID COUNT (NA): 3 a 6 c 3 g 6 t

REFERENCE:
 1 (bases 1 to 18)
 AUTHOR (AU): Deshpande, R.V.; Hitz, A.; Boyle, W.J.; Sullivan, J.K.
 TITLE (TI): Antagonistic selective binding agents of
 osteoprotegerin ***binding***
 protein

JOURNAL (SO): Patent: WO 0162932-A 22 30-AUG-2001; Amgen Inc. (US)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..18	/organism="Homo sapiens" /db-xref="taxon:9606"

SEQUENCE (SEQ):
 1 ccgactttgc acctagtt

STN INTERNATIONAL LOGOFF AT 17:24:29 ON 14 SEP 2004